Borough of



Cheltenham.

Annual Report

OF THE

SANITARY CONDITION

ETC., ETC., OF THE

BOROUGH OF CHELTENHAM,
FOR THE YEAR 1909,

ВУ

J. H. GARRETT, M.D., D.P.H.,

MEDICAL OFFICER OF HEALTH,

Together with the Report of the Chief Sanitary Inspector,

ALSO THE

Annual Meteorological Report by Mr. A. C. Saxby.

"Salus Populi Suprema Lex."

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BOROUGH OF CHELTENHAM.

PUBLIC HEATH COMMITTEE.

Mr. Alderman W. N. SKILLICORNE, J.P. (Chairman of the Committee),

THE MAYOR (MR. COUNCILLOR C. H. MARGRETT).

MR. ALDERMAN G. NORMAN, J.P.

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Mr. Councillor J. STEWART.

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Town Clerk-Mr. R. OWEN SEACOME.

Borough Surveyor—Mr. J. S. PICKERING.

MEDICAL OFFICER'S DEPARTMENT.

Chief Inspector of Unisances—A. E. HUDSON.

Ussistant Inspectors—

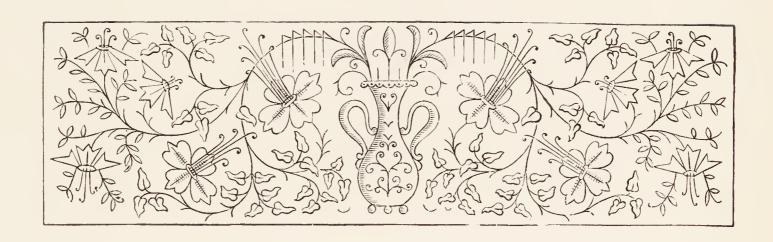
E. J. MANDERS. C. W. CLIFFORD. C. J. EMERSON.

Clerk-F. R. JEFFORD.

Medical Officer of Health-J. H. GARRETT, M.D.



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To the Mayor and Members of the Sanitary Authority of the Borough of Cheltenham.

GENTLEMEN,

I beg to present to you my Annual Report for the year 1909.

Relatively the year was not a favourable one. It followed immediately upon a year of exceptionally low mortality, and was marked by a most serious epidemic of Measles.

The Death-rate cannot however be expected to grow less indefinitely, and sooner or later we must reach the lowest limit of its reduction of which the circumstances of human life will admit. The best hope is that the increased average length of life at which we have now arrived will be permanent and admit of further lengthening yet, and in a town such as ours I believe the best test of the favourable nature of the statistics lies in the increase observeable in the length of life of individuals rather than in the number relative to the population that die in any one year.

The public care of the health of the individuals which make up the nation appears to be undergoing development, and whether there shall be one, or more than one, local managing authority of matters connected with health and disease is at the moment a matter of argument and indicision. But presumably an effort will shortly be made to gather together the several public health services under one authority, which would appear most likely to be the Town Council for towns of any considerable size.

I take the opportunity of expressing my appreciation of the assistance rendered me by every member of my own and other Departments of the Corporation during the past year in the execution of my very varied duties.

I have the honour to be, Gentlemen,

Yours faithfully,

J. H. GARRETT.

February 21st, 1910.

INDEX.

				G						PAGE
Ado	dress to the Mayo	or and Mer	nbers of the	Corp	oration	• •	• •	• •	• •	5
Vi	tal Statistic	es:-								
	Summary for 19	,009			• •	• •				7
	The Borough of	f Cheltenha	ım	• •	• •	• •		• •		7
	Geology and Al	titude .		• •	• •		• •			7
	Climate	• • •	• • •		• •	• •	• •	• •		8
	The Population				• •	• •	• •	• •	• •	9
	Births and Birth	h-Rate .	• • •	• •		• •	• •			9
	The Infant Dea	th-Rate .	• • •				• •		• •	10
	Deaths and the	e General	Death Rate	• •	• •	• •	• •	• •		10
	Deaths at Adva	nced Ages	• •							10
	Cancer							• •		II
	Bronchitis, Pne	umonia, Bi	oncho-pneu	ımonia	a and P	leurisy				II
	Table of Statist	ics for last	ten years	• •	• •	• •	• •	• •	• •	12
$Z_{ m Y}$	MOTIC DISEASES	•								
	Zymotic Diseas	es notified	in each mor	nth in	1909, a	ınd nu	mbers	treate	ed in	
	Hospitals	• •	• • •	• •	• •	• •	• •	• •	• •	13
	Measles	• •	• • •	• •	• •	• •	• •	• •	• •	13
	Scarlet Fever	• •	• • •	• •	• •	• •	• •	• •	• •	14
	Diphtheria	• •	• • •	• •	• •	• •	• •	• •	• •	15
	Enteric Fever	• • •	• • •	• •		• •	• •	• •	• •	15
	Diarrhœa	• • •	• • •	• •		• •	• •	• •	• •	15
	Vaccination	• •		• •	• •	• •	• •	• •	• •	16
	Number of Case	es of Zymo	tic Diseases	Noti	fied sin	ce Not	ificati	on beg	an	16
	Phthisis	• • •	• • •	• •	• •	• •	• •		• •	16
	Cases of Phthis	sis Notifie	d under the	1908	Regul	ations	• •	• •	• •	17
	The Delancey I	Fever Hosp	ital Manage	ment	• •	• •	• •	• •	• •	18
DE	EATHS CERTIFIED	BY CORO	ner after I	nquest	ts, 1909	• •	• •	• •		18
DE	EATHS NOT CERT	IFIED IN I	909	• •	• •	• •	• •	• •	• •	18
W	ARD STATISTICS:	:—								
	List of Deaths	in Streets o	of North Wa	ard	• •				• •	19
	,,	, ,	South Wa	ırd	• •	. •	• •			21
	,,	, ,	East War	ď		• •	• •			22
	,,	, ,	West Wa	rd		• •	• •	• •		24
	,,	, ,	Central V	Vard	• •	• •		• •		25
			Middle W	ard						26

De	aths in Institut	ions in	1909			• •	• •	• •	• •	• •	27
De	aths occurring	in the	Distric	t of Pe	ersons	belongi	ng to	Outside	Distr	icts	28
Di	fferen c es in the	Death	Rates	of the	Six W	⁷ ards		• •	• •		20
Ta i	ble giving Dea ts several Ward	ath Rads	tes fro		_	ecial ca		Chelte	nham	and 	30
	overnment Bo		_						• •	31	
	rge Table show										35
	ary Work	0									
Su	mmary of Rout	ine and	lother	Sani	tarv V	Vork de	one in	Healt	h Der	art-	
	nent in 1909	• •			• •	• •	• •		• •		36
Ins	spections	• •			• •						38
Im	provements in	Dwelli	ng Hou	ises	• •	• •					40
Pa	ving of Yards	• •	• •		• •				• •		41
Ho	use Drainage	• •	• •		• •	• •	• •	• •	• •	• •	41
Th	e Corporation S	Sanitar	y Certi	ficate				• •			42
Lis	st of Sanitary	Certific	ates gr	ranted	in the	year	• •	• •			43
Sla	ughter-Houses	• •							• •	• •	44
Pu	BLIC ABATTOII	₹:—									
	List of Butch	ers wh	o irsed	Abatı	toir in	the ve	ar		• •		45
	Number of A					•					46
Ur	sound and Dis		_								7
	n the year		• •		•••	••	••			• •	46
Ins	pection of Foo	od Sho	ps					• •	• •		47
Ins	spections under	the Fa	actory	and W	orksh	ops Act		• •			47
Fo	rmal Return u	nder th	ne Fac	tory a	nd Wo	orkshop	s Act		• •		50
Da	iries, Cowshed	ls, and	Milk	shops-	–Detai	ils of v	vork d	one in	this o	con-	
	nection	• •	• •		• •	• •	• •	• •	• •	• •	52
	h Receptacles			• •		• •		• •	• •		52
Off	ensive Trades	• •	• •	• •	• •	• •	• •	• •	• •	• •	53
	mmon Lodging										53
Sc	nool Sanitation	• •	• •	• •	• •	• •	• •	• •	• •	• •	54
Repo	rts upon 1	Matt	ers (of Cu	ırrer	it In	teres	st:			
	ohtheria and B										55
	asles, Epidemi						• •	• •	• •	• •	
	e Medical Insp							 Ivaiene	• •		57 61
	newal of Old S										63 66
	F FOOD AND I				• •	* •	• •	• •	• •	• •	00
	turn of Articles							• •	• •	• •	67
METER	ological Rep	ORT for	1909	by Mr.	Saxby	7	• •	• •	• •		69

VITAL STATISTICS.

SUMMARY.

				ACRES.
Acres of Municipal Borough	• • •		• • •	4,726
Rateable Value		• • •	• • •	£318,590
Population at middle of last year	ır	• • •	• • •	51,500
Population in 1901 Census	• • •	• • •	• • •	49,439
Persons per Acre in the Boroug	h	• • •	• • •	10.6
Average number of persons per	$\mathrm{hous}\epsilon$	e 1901 Ce	nsus	4.77
Death-Rate, 1909		Per Thousand Inhabitant	Living	15.2
Average Death-Rate for previ	ious			
ten years		? ?	"	14.1
Zymotic Death-Rate for 1909	• • •	"	"	1.21
Average Zymotic Death-Rate	for			
previous ten years		"	"	.93
Birth-Rate, 1909	• • •	"	"	18.4
Average Birth-Rate for prev	ious			
ten years	• • •	"	"	19.5
Infant /Death-Rate (under or	ie ye	ear old)	per	
Thousand Births, 1909				119
Infant Death-Rate Average for	previ	lous ten y	ears	
per Thousand Births		• • •	• • •	113

The Borough of Cheltenham.

Situated in West Central England at the edge of the Severn Valley and at the foot of the Cotswold Hills the town occupies a pleasant site in the midst of green country, and bears the character of a residential place. Its numerous streets are widely built, and many of them are planted with avenues of trees.

The absence of factory smoke admits of a comparatively clear air, and unstained walls, and the broad footpaths and well-swept streets assist to give Cheltenham an attractive appearance.

Geology and Altitude: The town stands upon the lias clay and upon sand which in part overlies the clay to varying

depths. More than half the population are resident upon a sandy subsoil but many of the largest houses of the most fashionable quarters stand on the bare clay. It is not possible to make out from the death statistics any particular influence, whether for comparative harm or good, that may be effective upon the health of individuals who live upon the sand and upon the clay respectively. There are some people however, who will aver, and probably with sound reason, that one location suits their bodily condition better than another. It is happily possible for such persons to make a choice to suit their idiosyncrasy in this regard when settling in Cheltenham.

The town has a fair altitude of about 200 feet near its centre. In the lowest parts of the North Ward, which is the poorest ward, there is a fall from this of about 40 feet. The greater part of the best residential quarters lie at between 200 and 250 feet rising to 350 feet at Leckhampton. The closely neighbouring Cotswold Hills reach about 1,000 feet in several directions. The electric tram line to the foot of Leckhampton Hill and to Cleeve Hill bring the higher

altitudes within easy reach.

CLIMATE: Mr. Saxby's Meteorological Report will be found at the end of this Report and may be studied in detail for the information it affords. The term "climate" however is difficult to define, and is not precisely represented by measurement of barometric pressure, rainfall and temperature. The conditions here are moist and soft rather than dry and harsh, and the same may be said for the greater part of the West of England. This however, cannot be said to be an extremely relaxing place. There is sometimes a want of keenness in the atmosphere about the central parts of the town, whilst on the neighbouring hills the air is always brisk and enlivening.

So far as can be estimated the climate here has no appreciable effect in heightening or lessening the general death-rate. It however would seem to be suitable to persons with irritable bronchial tubes, and acute rheumatism appears to be comparatively uncommon. It has been erroneously stated that cancer is of more than common incidence here. But this disease occurs chiefly in persons past the middle period of life, of which class our population contains more than the average number, and the apparently slightly higher incidence

of cancer here over that exhibited by the country at large is

discounted by this fact.

The Population: Our population is chiefly made peculiar by the fact just mentioned, that is, the unusually great proportion of elderly people included in it. This class is of comparatively feeble viability as compared, for instance, with the much larger relative number of young active adults who live in a manufacturing town. We have here a constant stream of settlers coming in whose life expectancy does not extend to many years. Their presence of course has an adverse effect upon the death-rate whilst raising the mean age at death.

The presence of a disproportionate number of females is another peculiarity, the numbers in our population being nearly three females to two males according to the last census returns.

I estimate our numbers for the middle of last year at 51,500. The census to be taken in the ordinary course next year may perhaps give us a surprise such as previous official counts have done, but I believe the above mentioned figure is sufficiently conservative judging from all the data I have at hand, especially in regard to the increased number of inhabited houses.

I mentioned last year that there would be considerable advantage in extending the borough boundary to include the urban portions of Charlton Kings which immediately adjoin Cheltenham forming with it one and the same town. It is probable that the march of events will have caused the Local Government Board to look more favourably upon such a proposition than they did at the time of an application which was made a good many years ago, and there has been much building at Charlton Kings since then, a good many of the new inhabitants being Cheltenham people, who are in and out of the greater town daily, the tram line having greatly facilitated locomotion. The matter requires a strong lead upon the Town Council if it is to be carried through, but this has not yet shown itself.

BIRTHS AND THE BIRTH-RATE: The births last year numbered 949 being within 6 of the number of the previous year, and the birth-rate of 18.4 per 1000 living is consequently almost identical with that of the year before and is one whole point below the average of the previous 10 years. The

male births preponderated according to the invariable rule being 488 male to 461 female births. The number of illegi-

timate births were 48 or 5.3 per cent. of all births.

THE INFANT DEATH-RATE: This is the rate of deaths amongst infants within the first year of their lives per 1000 born. It was 119 or some 6 above the average for the previous 10 years. About 30 per cent. of these deaths occurred in children incapable from congenital causes of living. There were 20 deaths due to premature birth and 14 attributed to such indefinite causes as debility, marasmus, atrophy. The more definite causes of disease destructive of infant life here last year, where diarrhoal diseases and respiratory diseases, with measles and whooping cough as the other chief diseases of infectious nature which caused deaths. The epidemic of measles is chiefly responsible for raising the infant deathrate last year for although only 10 infants were certified as dying from measles, the deaths from pneumonia, bronchitis and whooping cough which were in excess of the average were probably in a measure due to the measles. Two infants were last year suffocated in bed.

The death-rate as usual was greater amongst illegitimate infants, being last year twice as great per 1,000 births as the rate amongst legitimates. Thus amongst legitimate infants the death-rate was 111 per 1,000 legitimate infants born, but amongst illegitimates 250 per 1,000 illegitimate infants

born.

Deaths and the General Death-Rate: The 784 deaths belonging to the district were more numerous last year than the year before by 143. It was during the first fourteen weeks of the year that our death-returns showed the chief increase. The end of the winter and early spring is usually the most fatal period of the year, but into this period last year came the unfortunate epidemic of Measles with its 47 deaths directly assigned to this disease, and the greatly heightened death-rate from disease of lungs and air passages.

Deaths at Advanced Ages: 337 deaths or 43 per cent. of the whole were at ages of over 65 years. 190 reached the age of 75, 60 the age of 85 and 1 the age of 100. The causes of death at these advanced ages were chiefly given as from senile decay, heart diseases, cancer, bronchitis and pneumonia. The base cause of most of them was without

doubt the inevitable wear and tear of life, the organic wearing

out of the organs of the body.

Cancer: Our 71 cancer deaths giving the death-rate of 1.37 or 9 per cent. of all deaths is high, but is modified by the fact that 38 of these were from senile cancer at ages over 65 years. Our death-rate from this cause corrected for age and sex differences in our population is about the average for the whole country taking one year with another.

Bronchitis, Pneumonia, Broncho-Pneumonia and Pleurisy: Deaths from these diseases during last year were more in number than the year before by just 50 per cent., the numbers being 113 against 75. The Measles epidemic, assisted perhaps by adverse meteorological conditions, appears to have been the chief operating cause of the increase.

The nett death-rate from all causes was last year 15·2 per 1000 living, showing an increase upon the low rate of the previous year of 2·7, and an increase of 1·1 over the average of the previous 10 years. The chief contributory causes of this increase were measles, inflammatory disease of lungs and air passages, and senility including senile heart disease. A very favourable year is always likely to be followed by a less favourable one, because in the favourable year there is a saving in the lives of weaklings, that are likely to die within the next year or two to swell the normal death-rate of those succeeding years. To the converse, we may say that a bad year is not unlikely to be followed by a better one for the same kind of reason reversed.

Table of Statistics for the last 10 years, showing Deaths from Chief Zymotic Diseases, and Zymotic Death-rate, and Total Death-rate; also Total Births and Birth-rate per 1,000 of population, and (under 1 year old) Infant Death-rate per 1,000 children born.

	1900 1901	1901	1902	1903	1904	1905	1906	1907	1908	1909
Small Pov	49,000 49,500	<u>'</u>	49,700	50,500	50,500	50,500	51,000	51,000	51,000	51,500
Measles	: 07	: -	15	• •	: :	30	:- 2		• •	47
Scarlet Fever	•	\vdash	22	2	ന	Н	\vdash	•	•	•
Diphtheria	4	<u></u>	10	ണ	ന (9	6	2	\vdash	က
Whooping Cough		T-4	∞	ب م د	ന (-	ന	ا ن د
Diarrhæa, Enteritis, &c., in Young Children	73°C	16	7 m	16	36	24	16	15	16	22 2
Total Deaths from seven chief Zymotics	35	40	51	29	50	74	35	31	22	78
Death-rate from Chief Zymotics	.7.1	08.	1.02	.57	66.	1.46	89.	09.	.43	1.51
Total Deaths belonging to District	889	757	715	643	714	747	711	802	641	784
General Death-rate	14.0	15.2	14.3	12.7	14.1	14.8	13.9	13.8	12.5	15.2
Total Births	896	1005	945	1062	1961	995	975	881	955	949
Birth rate	19.7	20.3	19.0	21.0	19.0	19.7	19-1	17.2	18.7	18.4
Infant Death-rate per 1,000 Children born	115	111	120	85	133	131	100	95	06	119

Zymotic Diseases.

Speaking generally this town for some years past has been fortunate in connection with the chief zymotic diseases. There has been a comparatively light incidence, and the several diseases implicated have usually shown a mild type. In a town of this size there will always be such cases, and it is improbable that such diseases as Scarlet Fever, Diphtheria and Measles are ever extinct. There are always just a few cases existent. From time to time there has been a little outburst whether from a milk-borne germ or another cause, but with the exception of Measles these have never of recent years grown into wide epidemics, being generally strictly limited and controlled without great difficulty.

The type of most of the infectious diseases appears milder in a marked degree. The severity of Scarlet Fever is not as it was 30 years ago. Small-pox, when we see a case, is often of mild type being commonly influenced however by the modifying influence of vaccination. Even syphilis is reported to have undergone a change of type, with now less severe symptoms than formerly. Perhaps in regard to Diphtheria this may now also be said. Fewer of those marked and fatal cases appear to be now met with, and this apart from the influence which lies in treatment by antitoxin and the more frequent diagnosis made by bacteriological

Measles.: There was a bad epidemic of this disease in Cheltenham last year which began about the middle of February and extended with considerable rapidity through the town. Leckhampton however, was for a short time immune, doubtless due to its situation, although this district eventually succumbed, and it was only the isolated district of Up-Hatherley situated to the windward side of the Borough that escaped the wide prevalence of the disease.

About the same time Measles was epidemic in most of the Midland towns, and when the full sum is made in the Registrar General's Report of the deaths of the year from this cause the total is likely to be surprisingly great.

In the absence of notification, I have no means of telling the number of cases that occurred with us. There were 47 deaths.

On this occasion the complaint commenced in the very midst of the town. The children attending the Parish Church School being first affected. At a further stage in this report I have written something else upon this subject.

ZYMOTIC DISEA	ZYMOTIC DISEASES NOTIFIED in each month during 1909.								
Month.	Scarlet Fever.	Diphth- eria.	Enteric Fever.	Puerperal Fever.	Erysi- pelas.	Small- pox.	Totals.		
January February March April May June July August September October November December	3 5 1 12 3 18 6 9 8	6 3 8 3 1 7 3 2	3 7 6 1 1 1		3 5 2 2 1 1 3 5		20 13 22 10 15 5 24 7 18 14 9 13		
The 12 months Totals	87	39	20	• • •	24	• • •	170		
Total No. treated in Hospitals	7 5	18	9	•••	• • •	• • •	101		

Scarlet Fever: 87 cases were notified which is a very moderate incidence, a good deal below the average number of the past 20 years. There was no death. The number of return cases was somewhat high owing to the infectiousness of one boy who appeared to be the cause of the disease in his father, brother and sister by infecting them after his return from hospital. The father appeared to have contracted the disease by reason of having taken his convalescent son into bed with him. It is an extremely dangerous thing for any child discharged from a Scarlet Fever Hospital to be put into bed with another child or person on reaching home; but parents frequently pay but scant heed to directions, and are guilty of this and other foolish acts in connection with

their children who have recently returned from the Infectious

Diseases Hospital.

DIPHTHERIA: The number of Diphtheria notifications was low being 39 and amongst these there were three deaths. The average annual number of notifications of Diphtheria received during 20 years is 49. The new mode of diagnosis by bacteriological examination of material taken from the throat is tending to increase the number of cases of Diphtheria notified, what formerly was looked upon as a comparatively unimportant sore throat being now notified as Diphtheria. This subject is further dealt with in a short article towards the end of this report.

Deaths from Diphtheria are by far of most common occurrence between the ages of 1 and 10 years. The deaths that have taken place amongst Cheltenham Diphtheria patients during the 10 years 1900-1909 inclusive were aged as follows. The three deaths at over 10 years of age being

at ages 17, 52, 86.

Deaths from Diphtheria in Cheltenham 1900—1909 inclusive:—

Total Deaths.	Under 1 year.	1 to 5 years.	5 to 10 years	Over 10 years.
54	4	29	18	3

Enteric Fever: The 20 cases notified last year was very near the average number of 20 years. We only get a dropping case from time to time of this disease those few cases whose origin appears to be native tending to show a seasonal distribution.

Diarrhæa: There were 21 deaths from Infantile Diarrhæa, or gastro-enteritis, which terms are used to indicate the same thing in this town, i.e., a disease with Diarrhæa as its chief symptoms and probably of zymotic nature, the usual thing in fact which throughout the country is responsible for a greater average death-rate than that of any other zymotic disease. The number of deaths last year is very near the average number of deaths from this cause in Cheltenham.

Vaccination: The Vaccination Officer affords me the information that 460 primary vaccinations were done in Cheltenham in 1909. The births were 949. These figures speak for themselves and do not speak well.

Number of cases of Zymotic Disease notified in Cheltenham since notification began.									
Year	Scarlet Fever	Diphtheria	Enteric Fever	Puerperal Fever	Small-pox	Erysipelas			
1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907	93 75 264 419 147 89 126 224 296 273 103 67 147 142 143 116 104 30	16 15 10 33 26 25 60 43 52 80 74 58 63 65 59 65 61 71	24 19 10 63 27 34 26 20 23 16 32 18 17 7 16 24 14	2 4 1 3 4 1 5 1 1 3 6	 2 3 1 22 1 1 4 1	 21 16 19 25 25 42 37 16			
1908 1909	79 87	53 39	12 20	1 2		20 24			
Average for all years	151	49	22	1:7	1.7	24			

PHTHISIS.

The Act in force last year regarding the notification of pauper cases of phthisis brought us the numbers as set out below. When outside of the Workhouse these cases were all visited at the addresses given and treated in the same way as other poor cases that come to our knowledge as the result of the voluntary notification adopted by the Cheltenham Town Council some years ago, but which, I am sorry to say, is not much practised. I presume the new Act is of some benefit inasmuch as it compels greater notice to be taken of these

pauper cases of phthisis, and must help to impress the patient himself with the importance of his condition whether in

relation to himself or to the community.

The work we do in this connection in giving away cards of instruction and spitting bottles, and the personal talking to to which we occasionally treat one of these poor patients, as well as the disinfection which we now generally do after death and sometimes after removal, is altogether unsatisfying. Much more gratifying is the contemplation that apart from such trivial efforts phthisis appears to be decreasing, and superior modes of living will no doubt further decrease it, especially better housing. The death-rate from this cause is decreasing in Cheltenham. Last year it was '68, which is very moderate indeed.

The Cheltenham Town Council has not voted to subscribe for beds in the sanatorium distantly situated at Winsley, or otherwise provided for the treatment of consumptives. The sanatorium treatment is without doubt capable of checking the development of the disease when taken at an early stage, healing the lesion and giving the patient a fresh start. This does not happen in every case that goes to a sanatorium, but for others, the educative influence is of after advantage, in teaching them how best to conduct their lives.

Cases o	f Phthisis	Notified	under	the	Public	Health
((Tubercule	osis) Reg	ulation	s Ac	et, 1908	•

				Total Number.	Sa Male.	ex. Female.
Notifications ,, ,, ,,	under ,, ,,	Form ,, ,,	A B C D	12 15 3 1	10 12 3 1	2 3
Total		• • •	• • •	31	26	5

I regret to state that when enquiries were made at the addresses given in the notifications B, C and D, it was not infrequently discovered that no such person was known as that indicated on the notification, and in other instances the

person had departed, either without leaving an address, or having given an address in another district.

The Delancey Fever Hospital Management.

I had a note in my last Report upon the management of this Hospital which is by a Board of Trustees who cling with considerable tenacity to an obsolete mode. The local Medical Officer of Health has never had any part in the management of the wards and patients which he sends in, whether by superintendence or otherwise, these being in the hands of a local practitioner and the matron. I have made a strong representation to the Public Health Committee upon this matter, and have suggested to the Chairman and Secretary of the Trustees that they might with propriety take the guiding opinion of the Local Government Board upon the subject.

Deaths Certified by Coroner after an Inquest in 1909.

Accident by fall	• • •	• • •	• • •	4
", ", being run over …	• • •	• • •	• • •	1
,, ,, fall of stone in well		• • •	• • •	1
,, ,, being thrown from bicy	vele	• • •	• • •	1
,, ,, burns and scalds		• • •	• • •	3
", ", suffocation in bed …	• • • •	• • •	• • •	2
Angina pectoris		• • •		1
Apoplexy and cerebral hæmorrhage	• • •	• • •	• • •	5
Found drowned		• • •	• • •	1
Gastritis and Enteritis	• • • •	• • •	• • •	3
Hæmorrhage, rupture of aorta		• • •	• • • •	3
Heart disease, heart failure, syncope		• • •	• • •	8
Pneumonia, broncho-pneumonia, infl	lammation	of lun	gs	5
Septic poisoning after confinement	• • •	• • •		1
Suicide by cut throat	• • • •	• • •	• • •	1
Want of attention at birth	• • •	• • •	• • •	1

Deaths not Certified in 1909.

41

Measles at age 3 years.

Epilepsy and weak heart at age 51.

Premature birth at age 30 minutes.

Syncope and senile decay at age 85.

Ward Statistics.

The following Lists give the deaths in the streets in which they occurred. The figures after the name of the chief cause of death represent the age at death in years, unless weeks, days, or months are indicated, a comma separating one death from another when there are two or more from the same cause.

NORTH WARD.

Albert street, St. Paul's		influenza 51
Albert street, St. Peter's		apoplexy 63, bronchitis 83, albuminuria 68
Arle road		senile decay 85
T) 1		
	• • •	marasmus 4 months
Bloomsbury street	• • •	senile decay 74, measles 2, infantile cholera 2 months, icterus neonatorum 12 days
Burton street		marasmus 8 months, senile decay 84,
	•••	pneumonia 69, meningitis 5, epilepsy 51, phthisis 18
Carlton place		measles 9 months
Cleeveland street		enteritis 2 months, typhoid fever 15, neph-
		ritis 2, 29
Elm street		alcoholic neuritis 63, phthisis 22, apoplexy
		71, bronchitis 48, accident by fall of stone
		in well 42, erysipelas 3 months, premature
		birth 30 minutes
Gloucester road		marasmus 2 months, senile decay 74, 84,
Glodicester road	• • •	gout 83, apoplexy 83, general tuberculosis
C		II months
Granville street	• • •	pyonephritis 61, senile decay 71, 99, 77,
		heart disease 71, epilepsy 2, gastro-
		enteritis 11 months
Grove street	• • •	heart disease 47, 73, 63, senile decay 74,
		apoplexy 59, diarrhœa 12 months,
		hæmorrhage in lung 55, accidentally
		suffocated in bed 5 weeks, tuberculosis
		of lung and peritoneum 65, pneumonia
		50, enteritis 5 months, phthisis 54, 59
Hanover street		senile decay 69
Hereford place	• • •	heart disease 18, congenital syphilis 2 months
High street	• • •	senile decay 87, bronchitis 7 months,
0		endocarditis 79, influenza 45
Hungerford street	• • •	measles 4, 3, 9 months, heart disease 84,
	•••	cancer 74, congenital syphilis 8 months,
		broncho-pneumonia 44
King street		
King street	• • •	pneumonia 4, measles 18 months, nephritis
King street and		53, broncho-pneumonia 5 months
King street gardens	• • •	broncho-pneumonia 11 weeks, pneumonia
D/T - 1		50, erysipelas 88, phthisis 16
Malvern street	• • •	measles 17 months

Market street	• • •		heart disease 66, diarrhœa II months, convulsions 21 months, gastro-enteritis 6 months
Marsh lane	• • •	• • •	pneumonia 17 months, cancer 59, 72, heart disease 12, whooping cough 4 months
Millbrook street	• • •		pernicious anæmia 35, heart disease 69, 73
Nailsworth terrace	• • •		bronchitis 81, cirrhosis of liver 29
New street			pneumonia 52, exhaustion 5 minutes, senile
			decay 85, acute yellow atrophy of liver 23
Normal terrace	• • •	• • •	broncho-pneumonia 3 months, measles 12, run over 9, cerebral embolism 64
Park street (lower)			bronchitis 61, senile decay 79
Park street (lower)	• • •	• • •	
Queen street	•••	• • •	measles 12 months, 21 months, 20 months, 2, endocarditis 18, cancer 42, diarrhœa 2 months, meningitis (non-tubercular) 4, broncho-pneumonia 5 months
Russell place	• • •	• • •	bronchitis 67 measles 4, senile decay 84, intestinal atrophy 6 months, syphilis 46
Russell street	•••	• • •	broncho-pneumonia 3 months, tubercular meningitis 14, measles 21 months, pre- maturity 3 days, senile decay 82
St. Pauls' road	• • •		heart disease 29
St. Paul's street N	orth	• • •	measles 5, 2, senile decay 75
St. Paul's street Sc	outh		heart disease 21, measles 22
Stanhope street	• • •	• • •	bronchitis 55, suicide by cut throat 43,
1			heart disease 62, 67, 50, broncho-pneumonia 20 months, cirrhosis of liver 61
Stoneville street	• • •	• • •	senile decay 76, apoplexy 54, cancer 47, heart disease 67
Sun street	• • •		premature birth 1 day, heart disease 78
Swindon place			measles, 6, 11 months, premature birth 2 days
Swindon road			apoplexy 68, diabetes 8, phthisis 62,
			tubercular meningitis 3, dementia 82, premature birth 10 days, heart disease 55, enteritis 3, senile decay 89, 52, bronchitis 7 months
Swindon street		• • •	heart disease 72, appendicitis 24, alcoholic
			delirium 73, nephritis 64, senile decay 73, phthisis 55
Swindon terrace			heart disease 45, measles 21 months
Tewkesbury road	• • •		tubercular meningitis 3, measles 3, child-birth
J			30, debility 19 days, broncho-pneumonia
			18 months, senile decay 76, apoplexy 56, 50, phthisis 38, atrophy 16 days, gastroenteritis 1 month, meningitis 5, burns and shock 8, heart disease 64
Townsend street	• • •	• • •	measles 2, pneumonia 38, influenza 74, meningitis 2
Victoria street, St.	Paul's		senile decay 75, broncho-pneumonia 11
. 2			months, hemiplegia 54, bronchitis 67, congenital defects 21 months

Waterloo street ... cancer 49, general tuberculosis 8 months, apoplexy 70, phthisis 31
Worcester street ... cancer 36, apoplexy 70, premature birth 9

Worcester street ... cancer 36, apoplexy 70, premature birth 9 days, nephritis 64, 37, bronchitis 81

Whitehart street ... pneumonia 4 months

Deaths in Institutions not capable of exact reference but appropriated to this ward: senile decay 76, 81, 60, 89.

SOUTH WARD

		S	DUTH WARD.
Bath road	•••	•••	cancer 57, 32, 63, measles 9 months, heart disease 37, 29, phthisis 17, 38, pneumonia 70, 57, prematurity 20 hours, senile decay 81, 83, hydrocephalus 2 days, miliary tuberculosis, 21, strangulated hernia 63
Bath road (old)	•••	• • •	angina pectoris 64, marasmus 2 months, apoplexy 61, pneumonia 59, 3, cancer 68, nephritis 77
Bath street (upper	<i>i</i>)	• • •	bronchitis 57, enteritis 1 month, measles 16 months, nephritis 60
Bath terrace	• • •	• • •	phthisis 39, apoplexy 70, rupture of aorta 59, hemiplegia 76, cancer 66
Burnham place		• • •	cyrtitis and enteritis 48
Cambray			locomotor ataxy 64, apoplexy 69
Charlton lane	• • •	• • •	cirrhossis of liver 73, fall and injury to brain 41, cancer 74, myoma of uterus 74
Clare street			senile decay 93
College road	• • •	• • •	gastric ulcer 38, senile decay 84, tabes mesenterica 22 months
Commercial street	• • •	• • •	bronchitis 14 months, pernicious anæmia 57, measles 22, whooping cough 2 months
Corpus street	• • •		senile decay 81, fall and injured brain 70, diphtheria 2
Ewlyn terrace			heart disease 43
Ewlyn road			bronchitis 79, abscess 30
Exmouth street			phthisis 34, 14, congenital syphilis 1 month,
			cancer 53, heart disease 43
Exmouth terrace			measles 2
Fairfield avenue	• • •	• • •	cancer 73, 75, broncho.pneumonia I month, cerebral thrombosis 75
Fairfield parade	• • •	• • •	measles 10 months, cancer 55, premature birth 1 month
Fairfield Park road	d		senile decay 83
Fairfield road			apoplexy 73, peripheral neuritis 54
Fairfield street			heart disease 76
Fairhaven road			heart disease 78, 78
Francis street			enteritis 2 months, phthisis 36, 40, cancer
			79, senile decay 76
Gratton street	• •		bronchitis 54
Hall road			cancer 72
Hermitage street			nephritis 34, bronchitis 80, heart disease 74,
Ģ			apoplexy 70

High street	•••	
Kowy place		rheumatism 14
L	• • •	senile decay 76
Langdon road	• • •	cerebral softening 60, bronchitis 68, heart
T l-l		disease 49
Leckhampton road	•••	heart disease 83, 74, granular kidney 76, pneumonia 72, cerebral softening 86, urethral abscess 45
Leicester terrace	• • •	bronchitis 69
T 1 1	•••	nephritis 41
78.75	• • •	heart disease 69
Montpellier retreat		bronchitis 46, heart disease 65
Montpellier terrace		pernicious anæmia 69, cancer 72
Naunton crescent		heart disease 78, 68, senile decay 70, cancer
	• • • • • • • • • • • • • • • • • • • •	48, bronchitis 48
Naunton lane	• • • • • • • •	senile decay 86, diarrhœa 2 months,
		phthisis 32
Naunton parade .	• • • • • • •	pneumonia 5 months
Naunton park	• • • • • • • • • • • • • • • • • • • •	senile decay 81
Naunton Park aven	ue	apoplexy 69
Norwood street (Gr	eat)	phthisis 30, broncnitis 69
Oriel road		meningitis 9 months, phthisis 35
St. Luke's Church	square	apoplexy 69
C, T 1 1 1	• • • • • • • • • • • • • • • • • • • •	senile decay 91
C4 T12- 1	• • • • • • •	gastritis 74, pneumonia 70, cerebral throm-
		bosis 35, heart disease 70
Sandfo d road .		cancer 81, premature birth 1 day, phthisis
		47, ischio-rectal abscess 75
Sandford street	• • • • • • • • • • • • • • • • • • • •	diptheria 4, senile decay 80, 77, enteritis 3
		months, cretinism 2
Suffolk parade .	• • • • • • •	bronchitis 83, hemiplegia 70
Suffolk road	• • • • • • • • • • • • • • • • • • • •	heart disease 67, cancer 65, ethmoiditis and
	• • • • • • • • • • • • • • • • • • • •	cerebral abscess 19
Suffolk street .	• • • • • • • • • • • • • • • • • • • •	diabetes 72, heart disease 78
TT7 11'	• • • • • • • • • • • • • • • • • • • •	diabetes 67, heart disease 53
Deaths in Insti	tutions no	ot capable of exact reference but appropriated

Deaths in Institutions not capable of exact reference but appropriated to this ward: senile decay 87, pneumonia 64, hernia 86.

EAST WARD.

Albert place			broncho-pneumonia 1, nephritis 86
Albion street			measles 2
All Saints' road	• • •		senile decay 87, apoplexy 71, 78, bronchitis
			I month
All Saints' terrace	• • •	• • •	pneumonia 17 months, senile decay 95, gall
			stones 69
Berkeley place	• • •		embolism 66
Brighton road	• • •		syncope 14 hours
Carlton street	• • •	• • •	pulmonary hæmorrhage 16
Cleeve View road	• • •		premature birth 2 days
Columbia street	• • •	• • •	measles I
Duke street	• • •		paralysis 45, senile decay 77, 85

Fairfield road	•••	• • •	meningitis 2 months, senile decay 71, 77, 81, heart disease 77, 53, 70, phthisis 46, cancer 48, fall and fractured skull 59, diabetes 62, pleurisy 64
Fairview street	• • •	•••	malnutrition 7 months, pneumonia 47, 50, bronchitis 2, puerperal eclampsia 33
Glenfall street	• • •	• • •	granular kidney 47, sarcoma of femur 67
Hales road	• • •		pneumonia 80, apoplexy 87, nephritis 56
Hayward's road	• • •		icterus neonatorum 1 month
Hewlett road	• • •	• • •	apoplexy 60, 74, cystitis 86, cancer 70,
TT: de stos et			senile decay 76, measles 23, hemiplegia 70, eclampsia 2 months, influenza 73, premature birth 1 hour, enlarged prostrate 78
High street	• • •	• • •	appendicitis 69, senile decay 84, 79, diabetes 59, nephritis 47
Jersey street	• • •	• • •	bronchitis 38, 65, pneumonia 79, broncho- pneumonia 6 months, phthisis 47
Keynsham street	• • •		measles 12 months, heart disease 17,
•			cancer 88
King's street			heart disease 75, pneumonia 43
Leighton road			heart disease 21, cancer 56
London road	• • •		sarcoma of kidney 78, apoplexy 77, 68
Park street (upper)	•••	bulbar paralysis 61, measles 11 months, 2, senile decay 85, cerebral embolism 57, general tuberculosis 5, nephritis 47
Pittville circus	• • •		pyosalpinx and operation 71, senile decay 89
Pittville circus roa	ıd	• • •	cancer 63, senile decay 77
Pittville crescent	• • •		sarcoma of lung 88
Pittville villas	• • •		gall stones and operation 72
Prestbury road	• • •	• • •	epilepsy 15, bronchitis 69, pleurisy 42
Princes street	• • •		hemiplegia 80
Rosehill terrace	• • •	• • •	want of attention, newly born, septic
70 1 111			poisoning after labour 21, diarrhœa 3 months
Rosehill street	• • •	• • •	pneumonia 59, 30 days, tonsillitis 5, sarcoma of testis 26, gastric catarrh 1 month, premature birth 1 day
St. Anne's terrace	• • •	* * *	angina pectoris 39
St. James' street	• • •	• • •	heart disease 79, pneumonia 72
Selkirk street	• • •	• • •	senile decay 80
Sherborne place	• • •	• • •	congenital defects 9 hours, prematurity 3 minutes, marasmus 4 months
Sherborne street	• • •		pneumonia 5 months, pertussis 6 months, pleurisy 65, marasmus 2 months
Sidney street	•••	• • •	measles 2, cancer 70, 48, pneumonia 9 months
Sydenham road	• • •	•••	burns and shock 27, senile decay 75, cancer 40, angina pectoris 79
Sydenham villas r	oad	• • •	heart disease 67
Union street			heart disease 78, phthisis 42, tubercular
			meningitis 4

Victoria place ... pharyngitis 67, senile decay 80, 88, heart disease 74, bronchitis 72

Victoria terrace ... bronchitis 64, influenza 51

Whaddon lane ... senile decay 79, influenza 53, pthisis 29, enteritis 3

Winstonian road ... debility 4 months, pneumonia 67

York street ... measles 3, heart disease 62, 65

Deaths in Institutions not capable of exact reference but appropriated to this ward: senile decay 85, heart disease 48, gangrene 59

WEST WARD.

Alstone	• • •	measles 3, pneumonia 19, 37, bronchitis 66, senile decay 78, 83, chronic alcoholism 58
Alstone avenue		cancer 71
Arle road		broncho-pneumonîa 66
Chapel street	• • •	measles 10 months, prematurity 1 hour, cancer 68, senile decay 86
Christchurch road		senile decay 89, abdominal obstruction 97
Douro road	• • •	apoplexy 76
Eldorado road	• • •	arterio sclerosis 89
Glencairn park road	•	apoplexy 85
Gloucester road	• • •	senile decay 87, 83, cancer 78, 57, influenza 52, enlarged prostrate 73, senile decay 76
Great Western terrace		apoplexy 67, senile decay 76
Knapp road		heart failure 70
Lansdown crescent		aneurism 52, pleuro-pneumonia 30
Lansdown terrace	• • •	bronchitis 49, apoplexy 87, phthisis 52, heart disease 86
Libertus road		paraplegia 50, heart disease 58
Malvern place		apoplexy 83
Malvern road		parametritis 39, tachycardia 60, apoplexy 73
Manchester street	• • •	measles 1, endocarditis 14, heart disease 47, cancer 50
Millbrook street		heart disease 72, premature birth 1 day
New street	• • •	cancer 37, senile decay 75, phthisis 51, lencæmia 59, apoplexy 59
Overton park		appendicitis 72, senile heart 86
Queen's retreat		bronchitis 69, apoplexy 73, 58, premature birth 2 days
Queen's road		gastric ulcer 49, senile decay 82, pleurisy 57
Roman road		heart disease 66, meningitis 2, hypertrophy
Damen Gold mood		of liver 58, senile decay 91
Rowanfield road	• • •	paraplegia 52, measles 3, apoplexy 73
St. George's place	• • •	pneumonia 72
St. George's road	• • •	nephritis 64, 86, pneumonia 55, 72, arterio- sclerosis 55, cancer 64
St. James' parade	• • •	arterio-sclerosis 72
Western road		nephritis 66

Deaths in Institutions not capable of exact reference but appropriated to this ward: pernicious anæmia 55.

CENTRAL WARD.

Albion street	• • •		cancer 78
Berkeley avenue	• • •	• • •	heart disease 61, 53
Berkeley street			senile decay 77
Blenheim parade		• • •	senile decay 76, apoplexy 89
Brunswick street	• • •		measles 2, senile decay 85, bronchitis 73,
Dianowion Stroce	• • •	• • •	apoplexy 79, hepatitis 53, whooping cough 7 months, pneumonia 2, intussusception 4 months
Clarence square	• • •	• • •	typhoid fever 44, cancer 78, senile decay 92, 98, gastric catarrh 78
Courtenay street	• • •	• • •	bronchitis 86, senile decay 77, 81, cirrhosis
Dunalley parade		• • •	phthisis 60
Evesham road		• • •	senile decay 90
Fairview road			phthisis 54
Gloucester place			measles 15 months, pneumonia 63
Grafton passage	• • •		fall and apoplexy 40
Grosvenor place so		• • •	peritonitis 65
Grosvenor terrace	• • •		nephritis 58, heart disease 68, senile decay 79
Hanover street	• • •		phthisis 20, diarrhœa 5 months
Henrietta street		• • •	purulent peritonitis 6, gastritis 9
	• • •	• • •	heart disease 68
Highbury lane	• • •	• • •	
High street	• • •	• • •	general tuberculosis 24, cancer 48, heart disease 65, bulbar paralysis 76
0 1	• • •		apoplexy 82
Lime Kiln row	• • •		meningitis 10 months, cancer 80
Marle hill parade	•••	• • •	senile decay 92, bronchitis 66, hæmorrhage 33, cancer 31, heart disease 43, rheumatoid arthritis 74
Marle hill road	• • •	• • •	cancer 73
Normal terrace	•		nephritis 56
North place			nephritis 59
North street	• • •		acute rheumatism 39
Pittville lawn	• • •		heart failure 76, apoplexy 78, glycosuria 87
Pittville street		• • •	pneumonia 70
Portland square			measles 7, 17 months, cancer 58, 69,
			paraplegia 32, influenza 62, pneumonia 62, senile decay 84, 80, cancer 73, premature birth 2 months
Portland terrace			pneumonia 48
Portland street			cancer 60, strangulated hernia and operation
			76
Prestbury road	• • •		tubercular enteritis 4 months
Rose and Crown p			tubercular enteritis 3 months, diabetes 34
Rutland street	200250		apoplexy 76, pneumonia 2 months, heart
	• • •	• • •	disease 68, accidentally suffocated whilst in bed 11 months, peritonitis 17, bronchitis 72, measles 2, phthisis 38, puerperal septicæmia 22
St. George's street		• • •	phthisis 26, bronchitis 69, senile decay 83,
0.2.2.000			84, nephritis 28

St. Paul's parade ... pneumonia 3 months St. Paul's road endocarditis 32, laryngitis 17 months St. Paul's street North apoplexy 70, intestinal obstruction 77, arterio-sclerosis 62 Sherborne place diarrhœa 3 months Sherborne street marasmus 2 months, senile decay 73 Warwick place senile decay 88 apoplexy 76, bronchitis 39, tabes mesenterica Wellington passage 3, cirrhosis of liver 58 senile decay 90, heart disease 74 Wellington square ... Winchcombe street... heart disease 35, senile decay 82, malformation of heart 6 months Windsor street atheroma 84, general tuberculosis 29

Deaths in Institutions not capable of exact reference but appropriated to this ward: senile decay 85, hemiplegia 54, heart disease 72

MIDDLE WARD.

Andover retreat diabetes 50 Casino place whooping cough I month senile gangrene 80 Church road... cirrhosis of liver 67 Clarence parade cancer 56, senile decay 74 Clarence street Colonnade ... heart disease 68 apoplexy 79, cancer 64 Croft street ... Dagmar road heart disease 48, bronchitis I month heart disease 70 Edward street Gloucester road pneumonia 80, hepatitis 1 month Grafton terracc broncho-pneumonia 64 Greville terrace cancer 60 intussusception 3 Granley road months, measles 2 I months, senile decay 79, influenza 59 Hatherley road bronchitis 86, phthisis 24, cancer 69, 61, want of vitality 2 hours, heart disease 86, placenta prævia 42, premature birth 8 phthisis 50, cancer 64, gastro-enteritis 15 Hatherley street days senile decay 87 High street ... alcoholic neuritis 49 Imperial lane senile decay 80, diptheria 86, cancer 67, 67, Imperial square apoplexy 63, bronchitis 73 senile decay 84, pneumonia 14 months, Leckhampton road ... phthisis 56 Lypiatt street cancer 50, senile decay 78 cancer 70, apoplexy 74 Lypiatt terrace influenza 83, heart disease 66 Montpellier terrace... apoplexy 70, heart disease 64 Montpellier villas . . . Moorend grove nephritis 60 heart disease 24, general paralysis 48 Moorend road

Moorend street	• • •	influenza 65, measles 6 months, cirrhosis of liver 58, apoplexy 86, bronchitis 1 month, senile decay 79
Norwood street (great)		pneumonia 62, cancer 82
Norwood street (upper)	• • •	apoplexy 69, duodenal ulcer and operation 42, bronchitis 62, gastric catarrh 73, heart disease 84
Oakfield street	• • •	gastro-enteric catarrh 11 months, cancer 72
Queen's hotel stables	• • •	heart disease 74
Painswick road		glioma of brain 39, bronchitis 70, pneu-
		monia 26, apoplexy 80, angina pectoris 95
Park place	• • •	nephritis 70, bronchitis 67
Prince's road		cancer 87, nephritis 64
Promenade	• • •	cancer 71, nephritis 64
Regent street		gastro-enteritis 10 months
Rodney terrace	• • •	senile decay 86, 100, syncope 55, nephritis 66, 73
Rotunda terrace		heart failure 55
Royal crescent	• • •	pneumonia 92
Royal Well place	• • •	bronchitis 79
St. George's place		senile decay 81
St. James' terrace	• • •	gastric ulcer 39
St. Philip's terrace	• • •	measles 6 months, broncho-pneumonia 61
St. Stephen's road	• • •	heart disease 58
Shurdington road	• • •	heart disease 58, premature birth 1 day
Suffolk square	• • •	cancer 52, 83, apoplexy 23
Tivoli place	• • •	senile decay 85, heart disease 55
Tivoli road	• • •	nephritis 26, influenza 69
Tivoli street	• • •	apoplexy 71, icterus neonatorum 5 days, premature birth 1 month, heart disease 68

Deaths in Institutions not capable of exact reference but appropriated to this ward: cancer 71, senile decay 73

Deaths in Institutions.

The following deaths occurred in the several Institutions of the town, and have all been referred to the outside districts or streets in the town to which they properly belong, with the exception of 16, whose former addresses could not be obtained.

The General Hospital.—Gall stones 99, endocarditis 23, 32, 18, 21, gastric hæmorrhage 35, fibroid uterus 44, intussusception 4 months, 3 months, fall and fracture of skull 24, cancer 50, 47, diabetes 59, peritonitis 17, burns and broncho-pneumouia 5, burns and shock 8, scalds and broncho-pneumonia 2 months, bronchitis 39, 7 months, pneumonia 32, 38, 37, appendicitis 24, heart disease 66, 53, 55, acute rheumatism 39, tabes mesenterica 3, nephritis or granular kidney 47, 53, 29, 64, parametritis 39, purulent peritonitis 6, broncho-pneumonia 39, 44, tuberculosis of lungs and peritoneum 65, septic pericarditis 10 months, gastric ulcer 38, alcoholic neuritis 49, duodenal ulcer and operation 42, accident by fall of stone in well 42, fall and injured brain 70, 41, 59, puerperal septicæmia 22, hepatitis 1 month, diarrhæa 3 months, acromegaly 57, icterus neonatorum 12 days,

enteritis 3, 3 months, erysipelas 3 months, diptheria 2, general tuberculosis 5, lenkœmia 58, malformation of heart 6 months, marasmus 4 months, strangulated hernia 63, cerebral abscess 45, tubercular meningitis 4, meningitis (non-tubercular) 4.

The Workhouse Infirmary.—Senile decay 75, 75, 81, 76, 84, 74, 88, 81, 87, 76, 74, 74, 78, 85, 91, 79, 60, 75, 73, 85, 76, 81, 82, 79, 69, 91, 85, 82, 82, 85, apoplexy 59, 70, 73, debility 4 months, 19 days, malnutrition 7 months, general paralysis 48, phthisis 54, 18, 37, 40, 42, 54, 59, pneumonia 61, 72, 69, 64, 47, 79, 62, 50, 50, 70, bronchitis 87, 72, 67, 61, 80, 46, measles 3, 6, heart disease 47, 73, 45, 69, 18, 64, 48, 68, 50, 65, child birth 30, puerperal eclampsia 33, hernia 86, cancer 57, 59, 56, 53, 68, cirrhosis of liver 52, 61, 29, gangrene 59, erysipelas 88, syphilis 46, congenital spyhilis 8 months, pernicious anæmia 55, broncho-pneumonia 20 months, intestinal atrophy 6 months, hemiplegia 54, cerebral embolism 64.

DELANCEY HOSPITAL.—Diphtheria 4, 7.

Home for Sick Children.—Meningitis 5, 2, 14 months, 2, general tuberculosis 8 months, tabes mesenterica 22 months.

VICTORIA NURSING HOME.—Placenta prævia 42, premature birth 8 hours.

IMPERIAL NURSING HOME.—nephritis 60, 66, phthisis 60, strangulated hernia and operation 76.

CENTRAL SPA NURSING HOME.— Heart disease 65.

Nursing Home, 6, Royal Parade.—Abdominal tuberculosis 4, syncope 28.

HAY'S COTTAGE HOMES.—Gall stones 69 (died in General Hospital), angina pectoris 79, bronchitis 69.

Nazareth House.—Heart disease 84, 72, senile decay 75, 73, phthisis 20, cancer 71.

The following, which are included in the above as having died in our Institutions, came directly into them from outside districts as here indicated:—

Charlton Kings; burns and pneumonia 5, bronchitis 87, 80, senile decay 82, found drowned 16, phthisis 37, broncho-pneumonia 39.

Cheltenham, Rural District: senile decay 88, 74, 78, scalds and pneumonia 2 months, pneumonia 32, cirrhosis of liver 52, septic pericarditis 10 months, endocarditis 21, tubercular meningitis 14 months, diphtheria 7, syncope 28.

Winchcombe, Rural District: fibroid uterus 44, diabetes 57.

Gloucester, Rural District: endocarditis 23, fall and fractured skull 24, cerebral hæmorrhage 63.

Gloucester City: heart disease 84.

Hempstead: senile decay 75.

Appleforth: phthisis 20.

Balham: gastric hæmorrhage, 35.

East Dean, Rural District: pneumonia 61.

Broadway: tubercular meningitis 5. Sutton in Ashfield; abdominal tumour 4.

The following 16 deaths, which took place in the Institutions indicated, were not capable of being referred to their proper localities through loss of original address. They have been divided amongst the wards according to general likelihood and will be found at the end of the foregoing ward lists:—

Workhouse Infirmary: senile decay 76, 87, 60, 85, 81, 85, 89, pneumonia 64, hernia 86, heart disease 48, gangrene 59, pernicious anæmia 55, hemiplegia 54.

Nazareth House; heart disease 72, senile decay 73, cancer 71.

Differences in the Death-Rates in the Six Wards.

Of the six wards into which our town is divided, the North Ward always exhibits the worst statistics. The reason of this lies in the quality of the population. The estimated population of the North Ward is 9,700, and it is almost wholly a working-class ward. In it there is no overcrowding of houses on ground worth mentioning. There is one considerable row of back-to-back houses of small size, but the streets are in the main widely built and have plenty of ground about them, but the population is a poor one.

The respective numbers of deaths occurring in the six wards last year accord very nearly with the quality of the population of the wards. Where there are more poor houses there are more deaths, and the poorest streets present the longest list of deaths, as may be observed in the foregoing

lists, which show the deaths in the streets in which they occurred.

The highest death-rate continues amongst the poorest poor, and here, also, we may find the highest birth-rate and the two facts are in a measure related, since the mortality in the first year of life is everywhere great, and always greatest amongst the poorest. Theoretically, the greater the birthrate, the greater also the number of persons in a population at the period of least mortality, i.e., between the ages of 5 and 25. It is not certain, however, that these stop in the population into which they are born, and in such a population as our North Ward, where there is very little scope for work for adolescents and young adults, we may take it they do not. There are further reasons for a higher death-rate in a poor community; the death-rate from Zymotic diseases, for instance, is higher. Half the deaths due to the Measles epidemic of last year belong to the North Ward, though its population is not one-fifth that of the Borough. The more remote causes of frequent death are those pertaining to poverty, and the fact of having so many poor here must always militate against so low a death-rate as that shown in certain modern towns which are better favoured in respect of class of population than ourselves. This is a bad town for working-class people on account of there being no considerable means of wage-earning, and many of our poor residents are of the very poorest.

Ward Statistics, including Birth-rates and Death-rates from all and several causes, and Infant Death-rates (all at per 1,000 living inhabitants, excepting the Infant Death-rate, which is at per 1,000 children born) for the year 1909.	nd Death living orn) for	n-rates inhabita r the ye	from a ants, ex ear 1909	ll and s cepting 9.	several the In	causes, fant De	and eath-
	Whole Town	North Ward	South	East Ward	West	Central Ward	Middle Ward
Population		002,6	8,900	8,506	7,200	7,436	9,758
Birth-rate	18.4	28.4	20.0	19.0	11.5	18.5	11.4
General Death-rate	15.2	20.5	16.3	16.4	10.7	15.3	11.1
Infant Death-rate	119	150	06	142	48	87	134
Zymotic Death-rate	1.51	3.50	1.34	1.29	.55	1.21	\$
Phthisis Death-rate	89.	1.03	1.23	.47	85.	29.	.30
Tubercular Death-rate (other than Phthisis)	.31	.61	66.	.23	00.	29.	00.
Cancer Death-rate (all malignant disease)	1.37	27.	1.91	1.41	26.	1.47	1.74
Pneumonia, Bronchitis, &c., Death-rate (Diseases of Respiratory Organs)	2.19	2.88	2.54	2.93	2.50	1.74	.51

Local Government Board Table No. I.—Vital Statistics of whole District of the Borough of Cheltenham during 1909 and previous 10 years.

		BIRTHS RI	BIRTHS REGISTERED.	TOTAL DE	Total Deaths Registered in	тне	DISTRICT		Deaths of		NETT DEATHS AT	CHS AT ALL
VEAD	Population estimated to			Under 1 Year of age	sar of age	At all	ali Ages	Total Deaths in Public	Non- residents	Deaths of Residents registered	THE DISTRICT.	STRICT.
I BAN.	Middle of each Year.	Number.	Rate per 1,000 of Population.	Number.	Rate per 1,000 Births.	Number.	Rate per 1,000 of Population	Institutions in the District	registered in Public Institutions in the District.	in Public Institutions beyond the District	Number.	Rate per 1,000 of Population
1899 1900	49,000	1044 968	21.3	154	147	793	16.1	121	18	bour-	775	15.8
1901 1902	49,500	1005 945	20.3 19.0	112	1111	775	15.6	132	3 1 6	enoitut neigh intivr l medne	757	15.2
1903	50,500	1062	21.3	91	 0 0 0 0 0 0	999	1 H F	138	7 67 7	nand owall	643	12.7
1905 1905	50,500	995 995	19.7	131	131	773	14.0 15.3	162	19 26	nham are n	747	
1906 1907	51,000 51,000	975 881	19.1	98 84	100 95	743	14.5	172	3 0 2	poot	$711 \\ 708$	
1908	51,000	955	18.7	98	06	672	13.2	169	900	1	641	12.5
Averages for years 1899-1908	50,170	626	19.5	111	113	734	14.6	156	23.9	:	710	14.1
1909	51,500	949	18.4	113	119	814	15.8	180	30		784	1.52
Area of L cover For name	rea of District in acres (exclusive covered by water)	acres (excer)		of area 4,'	726 versons se	see pages	T N 27 & 28. A	Total popu Number of Average No	Total population at all ages Number of inhabited houses Average No. of persons per house	all ages houses ns per hou	49,439 10,352 ise 4.77	At A

Local Government Board Table II.—Vital Statistics of separate Localities in 1909 and previous 10 years.

	Deaths under I year	10 10 10 10 10 10 10 10 10	15
WARD	sə§A	110 100 100 100 100 100 100 100 110	109
	registered [Neaths at all	10	112 1
MIDDLE	Births		58 1.
•	l year Population	888 888 96 96 96 96 46 46	97
CENTRAL WARD	Deaths under	4 15 17 17 17 17 17 18 18 19 19 19 19 19 19 19 19 19 19	4 12
1L W	Deaths at all Ages	01 01 01 01 01 01 01 01 01 01 01 01 01 0	
NTR/	Births Pregistered	135 135 Return 135 Retur	138
CE	noitsluqoA	6553 6553 7336 7436 7436 7436 7436 7239	7436
D.	Deaths under 1 year	10 10 10 10 10	4
WARD	Deaths at all Ages	88 88 88 80 87 87 87 88 88 87 89 87 89 88 88 88 88 88 88 88 88 88 88 88 88	22
WEST	Births registered	96 92 92 94 7 99 85 85 85 85 85 85 85 85 85 85 85 85 85	83
M	Population	6039 6039 6039 6653 6653 6893 7050 7050 6706	7200
	Deaths under I year	4 & 4 & & & C & & & & & & & & & & & & &	23
WARD	Deaths at all Sees Ages	108 106 132 132 124 117 117 118	140
ST	Births registered	7 9607494079 7 010740779 7 01079	162
EA	Ropulation	\$242 \$242 \$242 \$242 \$250 \$350 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$500	8506 1
	Deaths under Lyear	∞ не не не не не не не не не не	9
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]	l year Population	80 80 80 80 80 80 80 80 80 80 80 80 80 8	8900
SD.	Deaths under	252 835 835 835 835 835 835 835 835 835 835	43
WARD	lls at states at all segA	161 132 180 173 143 194 197 160 163 163	199
ΥLН	Births registered	0N & & & & & N o & & & & & & & & & & & &	276
NORTH	noitsluqoA	9790 9790 9790 9923 10023 10023 9700 9700 9700	9700
٠	Deaths under 1 year	154 1112 1112 1114 1131 131 131 131 1111	113
BOROUGH OF CHELTENHAM	Deaths at all Ages	793 775 737 666 733 733 738 738 738 738	814
BOROUGH OF CHELTENHAN	Briths Pregistered	0444 968 905 945 961 995 955 975	949
BOR	Population esti- mated to middle of each year	49,000 1 49,000 1 49,500 1 50,500 1 50,500 51,000 51,000 51,000 51,000 51,000 50,500 500 500 500 500 500 500 500	51,500
Names of Localities	Year	1899 1900 1901 1901 1902 1904 1905 1905 1906 1908 of years 1899 to	1909

N.B.—In the first two years of these statistics the deaths in hospitals, &c., are not referred to the respective Wards, but are altogether excluded from the Ward statistics. Since 1900 the deaths in hospitals are included and as far as possible, properly referred to the Wards to which they belong. The deaths in the whole Borough include all that died within the Borough, whether belonging to the district or not.

Local Government Board Table III.—Cases of Infectious Disease notified during the year 1909

for the Borough of Cheltenham.

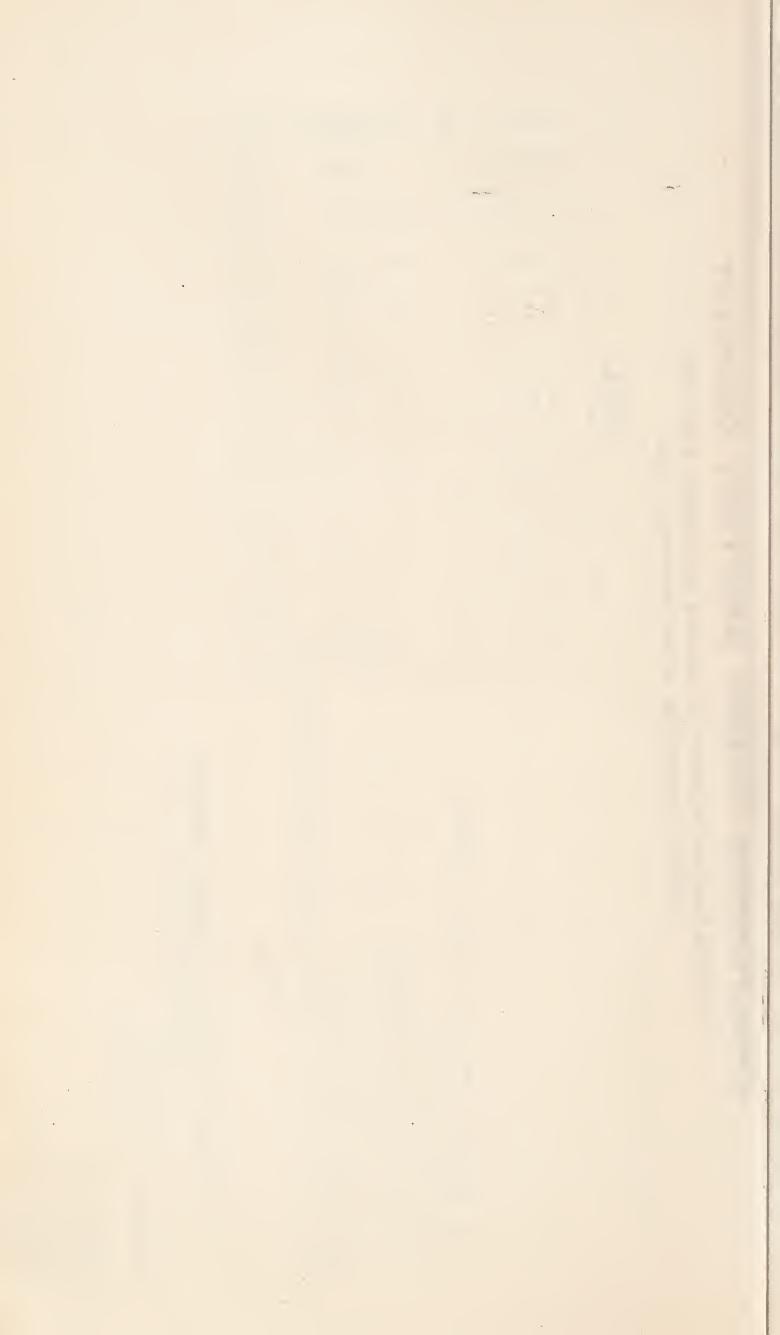
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noved t Locali	West Ward.	•	C 7	•	15	\neg	•	18
Cases removed to Hospital from each Locality.	East Ward.	•	4	•	13	C 2	•	19
of	South Ward,		4	•	11	C 7	•	17
No.	North Ward.	:	က	:	16	Н	•	20
ality.	Middle Ward.	:	6	C 3	15	Н	•	27
Total Cases notified in each Locality.	Central Ward.	•	က	က	4	4	•	14
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Cases Notified in whole District.	15 to 25.	•	9	22	14	5	•	27
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Cases	Under 1.	¢ 4 8	•	22	•	*	•	C 2
	səgA Ils A	•	39	24	87	20	•	170
	Notifiable Diseases.	Small-Pox	Diphtheria	Erysipelas	Scarlet Fever	Enteric Fever	Puerperal Fever	Totals

Local Government Board Table IV.—Causes of, and Ages at, Death during Year 1909 in the Borough of Cheltenham.

Deaths in Public	Institu- tions in District	2 :: :: :: :: :: :: :: : : : : : : : :	180
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ies	Mid- dle Ward	w - 1 : 4 w : w : - 2 : - 2 : - 2 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 : - 3 <t< td=""><td>109</td></t<>	109
Deaths in or belonging to Localities (at ull Ages).	Cen- tral Ward	20 : 1 : 2 : 1 : 2 : 1 : 1 : 1 : 1 : 1 : 1	114
n belonging to (at all Ages).	West	4 : : : u : : : : : : : : : : : : : : :	77
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ct	25 and 65 and under up-	252 : : . 6 :	337
Deaths in or belonging to whole District at subjoined Ages	15 and 25 and under under 65	: : : : : : : : : : : : : : : : : :	231
to whol. Ages		H : : : : : : : : : : : : : : : : : : :	23
onging to who	5 and under 15.	03 : : - : : : : : : : : : : : : : : : : : : :	17
t or belov at sub	1 and under 5.	8	63
eaths in	Under 1.	01 01 02 188 4 1 188 20 20 188 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 .	113
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CAUSE OF DEATH.	All Causes { Certified	Measles Whooping Cough Diarrhœa, all forms likely to be	itis, eriti	Premature Birth Congenital Defects	Atrophy, Debility, Marasmus Tuberculous Peritonitis: Tabes	erculous Diseases	Syphilis	Bronchitis Preumonia & Broncho-pneumonia Suffocation, overlying Other Causes	Totals

Births in the year:—Legitimate, 901; Illegitimate, 48. Deaths in the year:—Legitimate infants, 101; Illegitimate, 12. Deaths from all Causes at all Ages, 784. Population, estimated to middle of 1909, 51,500.

WORK DONE.

SUMMARY OF ROUTINE AND OTHER SANITARY WORK DONE IN THE HEALTH DEPARTMENT DURING 1909, WITH NOTES THEREON.

REPORT BY THE CHIEF SANITARY INSPECTOR.

I herewith submit my report, as Sanitary Inspector of the Borough of Cheltenham, giving detailed information of the work done by the staff of the Department during 1909. During the year the places and trades over which the Town Council have sanitary control, and which are supervised by the Health Department have been systematically inspected. The work carried out includes house-to-house inspection, the inspection of houses-let-in-lodgings, common lodging houses, slaughter-houses, bakehouses, cowsheds and dairies, factories, workshops, workplaces and out-workers' premises, and the disinfecting of clothing and rooms after infectious disease. Each and all of these duties have occupied the time and required the attention of the Sanitary Inspectors, and whenever insanitary conditions were found to exist such action as was necessary for their removal was promptly taken. The execution of all works undertaken for the removal or suppression of nuisances, whether it be a small matter of repair or constructional work, is carried out under the supervision of the Sanitary Inspectors. I am pleased to be able to again report that in nearly every case the owners agents and other responsible parties have readily complied with the notices served from the Department, requiring them to improve the sanitary condition of their property, and that in only two cases has it been necessary to take legal proceedings to enforce compliance with the notices served. Following the practice adopted in previous years, a statement of sanitary operations is furnished below. reference to the table it will be seen that 2,781 nuisances were discovered in connection with 1,829 houses and premises. To abate these nuisances 578 notices were served. In addition to the notices served, 537 letters were written requiring owners of property to carry out structural amendments.

Summary.

Total number of Houses and Premises Inspected		14729
Ordinary Inspections		1884
House-to-house Inspections	• • • •	1280
Inspections of Work in progress		2563
Re-inspections	• • •	2300
Visits to Slaughter-houses		1278
" Food Shops		661
"Houses Let in Lodgings	• • •	114
" Common Lodging Houses		284
,, Cowsheds, Dairies and Milkshops	• • •	202
"Bakehouses		89
,, Workshops		845
" Schools		75
,, re Infectious Diseases		558
,, re Public-house Conveniences		36
,, Places where Animals are kept		2560
Complaints received		288
Number of Nuisances reported	• • •	2781
Houses and Promises dealt with	• • •	1166
Notices Served	• • •	578
Lottong Writton referring to Notices	• • • •	537
" Letters Written referring to Notices	• • •	991
Drains :—		
	-	
Drains opened and examined under Sec. 41 P.H. A	ct, 1	
Smoke Tests applied to Drains and Soil Pipes		193
Chemical ,, ,, ,,	• • •	38
Water ", ", ",	• • •	548
Defective Brick Drains removed ,,	• • •	22
New Drains laid	• • •	206
Length in yards of Stoneware Pipe Drains laid		4918
" Heavy Cast Iron Pipes laid	• • •	1363
Manhole and Inspection Chambers provided		196
Intercepting Traps fixed	• • •	113
Stoneware Gully Traps fixed		362
Dip and Bell Traps removed		94
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W.C.'s :— New Water Closets built 22 New W.C. Pans of the Wash-Down type fixed 320 Old Pan Containers and Long Hopper Closets removed 49 Flushing Boxes fixed to W.C.'s 69 Flushing Boxes repaired 92 Water Closets and Drains unstopped... 57 Soil Pipes :— Soil Pipes and Ventilating Shafts fixed 92 New Waste Pipes trapped and disconnected ... 162Miscellaneous:— Rooms cleansed and limewashed 517 House Roofs, Rainwater Pipes, &c., repaired 335 Yards and Areas asphalted or concreted 71 Ash Receptacles (movable galvanized iron with covers) 197 Bakehouses cleansed and limewashed 14 9 Slaughter-houses cleansed and limewashed ... 5 Common Lodging-houses cleansed and limewashed... Overcrowding in Dwellings abated 12 Samples of Water taken for Analysis 44 New Urinals provided 10 6 Urinals provided with a proper supply of water Accumulations of Manure removed ... 104 14 Manure Receptacles built or reconstructed ... Infectious Diseases:— Inquiries into Cases of Infectious Diseases ... 558 Notices to Schoolmasters with regard to Infectious 51 Disease Notices to Parents with regard to Infectious Diseases 26Notices to Free Library with regard to Infectious Disease 12 Rooms Disinfected after cases of Infectious Disease 499 Articles of Clothing, &c., disinfected after Infectious Disease 3168Articles of Clothing disinfected for outside Sanitary Authorities and private persons... 233

Inspections.

The total number of inspections made by the Inspectors during the past twelve months was 14,729. Of these 1,280 were house-to-house inspections, 2,300 were re-visits to

premises to ascertain if the notices served had been complied with, 2,563 to inspect work in progress, 1,939 to slaughterhouses and food shops, 845 to workshops, and 558 in connection with Infectious Diseases. The systematic house-tohouse inspection, as required by the orders of the Local Government Board, provides us with information upon which many of our notices, requiring sanitary improvements in house property, are served. The examination is made for the purpose of ascertaining whether statutory nuisances exist and whether the houses are in a reasonably habitable condition. In a number of the houses occupied by the poorer working classes, there were found a large number of small bedrooms without any fireplace or any other ventilating opening. many cases where fireplaces do exist, elaborate means had been taken by the tenants to render them useless by stuffing up the flue with old rags, bags of straw, or covering the opening by pasting over a large sheet of stout paper. Whenever such conditions were found to exist the visiting Inspector took the opportunity of tendering a few words of advice to the tenants on the advantage of utilising the chimney flue as an outlet ventilator. Where no fireplace existed, and there was evidence that such bedroom was used for sleeping purposes, notice was served upon the landlord requesting him to fix in the external wall of such apartment an iron grating giving an unobstructed opening of at least 100 square inches. It is to be regretted that the occupiers of this class of house do not better appreciate the value of fresh air, for in some cases where ventilating gratings had been provided by the owners at our request, the occupiers had carefully covered them over and rendered them absolutely useless for the purpose for which they were intended. Perhaps in time such people may be made to see that they are acting against their own interest and rendering their rooms less wholesome by the rigid exclusion of fresh pure air. To make matters even worse many of the windows in such rooms could not be properly opened owing to one or both of the sash cords being broken. Many casement windows were also found which could be only opened partially, owing to the frame being in a bad state of repair or with one of the hinges broken. These are the kind of defects that very many of the owners of this class of houses seldom think of having attended to and their tenants are frequently as indifferent on the matter as the

owners. Whenever a suitable opportunity presents itself we try to impress the people with the advantage of the open window, but this of course cannot be obtained unless the sashes and frames are in a proper state of repair. When inspecting these poorer class houses one is struck very forcibly by the dirty and neglected condition of many of the homes. This is due in the majority of cases to the idleness and indifference of the women who are responsible for their management. The owners of the property have frequently gone to considerable expense and trouble to have ceilings and walls cleansed and put into a good state of repair, but receive little or no encouragement for so doing from their dirty tenants, who fails to support their efforts to make the places look somewhat respectable. Visit any of this kind of house and the same signs are always apparent, broken windows, filthy and unswept floors, damaged plaster, drains stopped up so far as the vigilance of the Sanitary Inspector will allow, the remnants of the last meal on the table, untidy rooms heaped with filthy bedding and indiscriminate litter, while the inmates correspond too well in person and dress with their surroundings. It has been necessary in many instances to give written or verbal notices to these dirty tenants to sweep up and wash the floors and generally tidy up their house. We are also frequently compelled to call the attention of these people to the filthy condition of the water closets. The seats and floors of these places being frequently in abominable condition, chiefly owing to improper usage.

In the course of the inspections made many other kinds of structural defects than those referred to above were discovered, such as leaky house roofs, damp house walls, floors and walls in bad state of repair, defective yard paving, etc. The complaints and applications received at the office numbered 288, all of which were duly investigated and dealt with as found to be necessary. Many of these complaints were of the usual trivial character, and in some cases no nuisance could be discovered at the places complained of.

Improvements in Dwelling Houses.

The improvements obtained through the medium of our Department vary from trifling repairs to eaves spouting, rainwater pipes, etc., to the stripping of house roofs and re-covering same with new slates; the laying of sub-soil drains to take away sub-soil water, and the covering with some impervious material, usually concrete, the floor area of houses; and the insertion of damp-proof courses in the house walls, the latter improvements being made so as to secure dry and healthy houses. During the year 517 rooms were cleansed, limewashed or repaired, 330 house roofs, eaves spouting, rainwater pipes, etc., renewed or repaired; 22 new and additional water closets provided, and 12 cases of overcrowding abated. Altogether 2,781 improvements have been made in connection with 1,166 premises.

Paving of Yards.

This is a form of sanitary improvement which is much needed, especially in the case of the yards of small properties. Unpaved yards are not conducive to cleanliness in the house, and foul water thrown on them gradually soaks into the ground, fouling the soil and rendering it dangerous, especially under the action of the summer heat, when it may give off disease germs, which easily find their way into the house, and may settle upon the food, and in this way may be taken into the bodies of the occupants. Many house walls are found to be damp, such dampness being frequently due to the want of impervious paving to carry away the rainwater to a suitably placed drain. It is impossible to properly cleanse yards, the surfaces of which are unpaved, and these are the yards in which one usually finds most dirt and filth and which are therefore the most dangerous. A fair amount of work was done in this connection during the year, some 71 yards and areas being paved with asphalte, concrete or blue bricks.

House Drainage.

A very large proportion of our time is devoted to the detection of faulty drains and in supervising their repair or renewal. A good deal of the work under this heading is usually the result of house-to-house inspections. A good number, however, are the outcome of complaints received as to nuisances existing, the investigation of which leads to the alteration, repair, or renewal of house drains and their connections. In consequence of written complaints alleging a

nuisance from defective drainage, the Council instructed me to have the ground opened so as to examine the condition of the drains at 52 houses. In each case insanitary conditions were found to exist, and notices under Sec. 41 of the Public Health Act, 1875, were served upon the persons responsible to repair or reconstruct the drains as required. In addition to the work done under the above Act, a good deal of drainage work has been done to obtain a Corporation Sanitary Certificate, and also by verbal notice from the Inspectors. Altogether we have supervised the laying of 4,918 yards of stoneware pipes, and 1,363 yards of heavy cast-iron coated pipes, with blue lead joints, also the fixing of 113 intercepting traps, 363 gully traps, and 196 manholes and inspection chambers. In connection with this work 22 old brick drains were removed and replaced by watertight drains, and 94 iron dip and bell traps were removed and stoneware gully traps substituted.

The Corporation Sanitary Certificate.

The demand for Sanitary Certificates still continues, the number which are issued from year to year varying very little. There were 45 Certificates granted last year, making the total issued since the commencement of this work 804. Incoming tenants should take notice that by paying a small fee and making an application for a Corporation Sanitary Certificate, they can obtain a written report of the condition of the house showing every defect requiring remedy to bring it up to such a condition of modern perfection as to admit of the Certificate being granted. Many persons fail to make such an application before signing the lease, and then suddenly remember that they have omitted to inquire into the sanitary state of the premises. They then approach the owner with a view of having the house inspected, but he is usually disinclined to agree to a course which may involve him in the expenditure of some pounds in order to do the work necessary to bring the drains and fittings up to date. The best time to make such application is before signing the In many cases the prospective tenants are assured by the owner that everything is perfectly right, and it is only later, when settled in the house, that they find such assurance The practice in this town is, when an application valueless.

for a Certificate is made, to examine the sanitary appliances of the house and to test the drains, the applicant being furnished with a report of the defects found and a full detailed specification of the work required to be done to make the place safe and sanitary. When this work is satisfactorily carried out the Sanitary Certificate is granted.

Sanitary Certificates.

Situation of Premises.				Gross A Valu	
Alstone Lodge, Queen's Road				_	130
Bayshill Terrace, 12				±	50
Berkeley Street, 1				• • •	40
Brandon House, Painswick Roa					170
Camperdown, St. Stephen's Roa					110
Cheltondale Villas, 2, St. Luke'				• • •	28
					30
		•		• • •	35
1 /				• •	90
Compton, Eldorado Crescent				• •	
Cotswold, Thirlestaine Road (2				• •	250
Douro Villas, 5	•			• •	90
Eastholme, Wellington Square		• •	• •	• •	75
Fauconberg, Overton Road		• •	• • •	• •	133
Fernbank, Pittville		•	• •		85
Glenarbuck Lodge, The Park		• •	• •	• •	80
Holme Dene, Evesham Road		• •	• • •	• •	100
Home for Sick Children, Harp		• •	• • •	• •	60
Huntley Lodge, Montpellier Gr	cove .	• •	• •	• •	50
Leighton Road, 4	•	• •	• •	• •	16
Lypiatt Terrace, 5	• •	• •	• •	• •	60
Lansdown Crescent, 9	•	•	• • •	• •	40
Mona, Tivoli Road	• •	• •	• • •	• • •	30
Montpellier Grove, 10	•		• • •	• •	45
Mostar, Queen's Road		• •	• • •	• •	35
Mowbray, Prestbury Road		• • .	••	• •	30
Northwick Villas, 1, Douro Roa	ad		• •	• •	60
Pittville Lawn, 7	• • •		• • •		55
Paragon Terrace, 6			• • •		28
Pittville Villas, 66		• •		• • •	45
Pittville Villas, 14	. •			• •	41
Priory Parade, 3			• •	• •	45
Redesdale, The Park		•	• •	• •	200

				Gross	s Annual
Situation of P	remises.			Va	alue.
Rodney Place, 4	• • • • •	• • •	• • •	• • •	£ 42
Royal Parade, 18		• • •	• • •	• • •	60
Queen's Villas, 2, Queen		• • •	• • •	• • •	45
Stoneville, King's Road		• • •	• • •	• • •	25
Sydenham Villas, 12	• • • •	• • •		• • •	50
Terhill, Pittville Circus	2 4 •	• • •	• • •	• • •	120
The Laurels, St. George			• • •		24
The Laurels, St. Stephe	n's Road	• • •	• • •		70
Tivoli House, Tivoli Ro		• • •	• • •	• • •	52
West View, Western Ro		• • • •	• • •	• • •	50
Welton, Christ Church	Road	• • •		• • •	65
Yarrowby, Tivoli Road	• • •		• • •	• • •	25

Slaughter-Houses.

The number of private registered slaughter-houses remains as last year, namely, eighteen, and to these 1,278 visits have been paid. The majority of these visits have been made during the latter part of the afternoon or in the evening, so as to enable us to examine the animal carcases and their internal organs during, or shortly after, slaughtering has taken place, and before the removal of the carcases, etc., to By these inspections we have endeathe butchers' shops. voured to make the examination of meat at these private slaughter-houses as thorough as possible and as near to the standard which obtains at the Public Abattoir. When it is remembered however, that animals can be slaughtered at any hour of the day or night, and the carcases removed without our first inspecting them, it is obvious that under these conditions, meat inspection must be imperfect and totally inadequate and much below the standard at the Abattoir, where every animal is slaughtered under the supervision of an official. We do the best we can, and fortunately we are assisted by some of the butchers, who when they observe anything of a doubtful or suspicious nature when dressing an animal, notify me and request an inspection of the carcase, and generally willingly surrender for destruction any diseased animal or internal organs which it is considered necessary in the interests of public health should be so destroyed. Whilst all the animals slaughtered in the Abattoir are thoroughly examined, and we see as many as possible of those slaughtered in the registered slaughter-houses, there is a considerable

quantity of meat sold in the town the carcases and organs of which have undergone no examination at the time of slaughter. A large quantity of dead meat of all kinds arrives in the town from the neighbouring district, and very large quantities of frozen and chilled meats of all kinds come from the Colonies and from foreign countries. All meat coming from foreign parts to this country bears evidence of having been inspected and passed as fit for human consumption, and bears a stamp either on the carcase or covering to the effect that it has been so inspected. Home dead meat reaches the town by road chiefly, and bears no evidence of having been inspected in any way. As a matter of fact, we are aware that a considerable quantity of it has not undergone any examination by the responsible officers of the districts from which it comes. The Local Authority ought to be empowered to compel all persons bringing dead meat into the town, not bearing the stamp of having been examined, to deposit it in a clearing-house for inspection before it is allowed to be offered by sale to the public. The bye-laws as to the limewashing of walls, the cleansing of walls and floors after slaughtering, and the removal of offal, skins and garbage, have been on the whole satisfactorily carried out.

List of Butchers who Regularly Used the Abattoir during the Year.

General Butchers.

Situation of Premises.

Mr. S. J. Burrows ... Charlton Kings
Messrs. Collins & Co. ... 278, High Street
Mr. G. M. Davis ... 4, Rotunda Terrace,
Montpellier Street
Messrs. A. D. & D. Downham 3, Exchange Buildings, Bath Rd.
Mr. E. T. Drew ... 95, Winchcomb Street
Mr. G. Dickenson ... Prestbury
Mr. G. Hannis ... 307, High Street

Mr. J. Hayward ... 2, St. Mark's Emporium, Gloucester Road
Mr. L. James ... Clare Terrace, Bath Road
Mr. P. M. Nash ... 402, High Street

Mr. P. M. Nash ... 402, High Street Mr. H. T. Pryer ... 308, High Street ... 276, High Street

Name.

Mr. G. Willis ... Regent House, Swindon Road

Pork Butchers.

Name.	Situation of Premises.
Mr. F. P. Carrick	294, High Street
Mr. T. Mills	222, High Street
Mr. A. Smith	280, High Street
Mr. J. W. T. Jackson	243, High Street
Mr. L. Giles	76, Tewkesbury Road
Messrs. Locke & Sons	17, Clarence Street

Number of Animals Slaughtered in the Abattoir during 1908 and 1909.

	1908		1909
Beeves	1831	• • • • • • • • • • • •	773
Calves	920	• • • • • • • • • •	964
Sheep	3192	• • • • • • • • • • • • • • • • • • • •	3329
Lambs	480	• • • • • • • • • •	444
Pork Pigs	1614	• • • • • • • • • •	1118
Bacon Pigs	213		200
			~ ~ ~
	7250		6828

Unsound and Diseased Meat, etc., destroyed last year as unfit for the food of man.

- 2 carcases of beef—seriously affected with tuberculosis
- 2 forequarters of beef—localised tuberculosis
- 9 pork pigs—seriously affected with tuberculosis
- 1 bacon pig—seriously affected with tuberculosis
- 5 sheep—wasted and dropsical
- 2 sheep—pleuro-peritonitis
- 5 boxes of cod—unsound
- 2 barrels of haddock—unsound
- 28-lbs. hog casings—unsound
- 1 barrel of herrings—unsound
- 12-lbs. ham—unsound
- 291 livers, lungs, or other internal organs of animals, which were on examination found to be locally diseased, were surrendered and destroyed. The total weight of meat, fish, and unsound food destroyed was 2 tons 10 cwts. 2 qrs.

Inspection of Food Shops.

The various butchers', fishmongers', greengrocers' shops and other places where food is sold, were frequently inspected during the year. Several lots of unsound meat, fish and fruit were submitted for our inspection; in each case the articles submitted were carefully examined and sorted if it was necessary, the unsound or unwholesome food being in all cases voluntarily surrended by the tradesmen for destruction. The following table gives some information as to the number of shops devoted to the preparation or sale of food in this town:—

Butchers' Shops		15
Fish and Chipped Potato and Faggot Shops		15
Fish Dealers		21
Tripe Shops	• • •	4
Fruiterers' and Greengrocers' Shops	• • •	81
Restaurants	• • •	12
Tea Rooms	• • •	9
Confectionery and Sweet Shops	• • •	104
General Shops	• • •	42
Dairies and Shops were Milk is Sold	• •	47
Provision Dealers' and Grocers' Shops	• • •	128
Bakers' Shops	• • •	48
Ice Cream Shops	• • •	6

Inspection under the Factory & Workshops Act.

As usual, a good deal of time and attention has been devoted to the inspection of workshops, workplaces and outworkers; a number not previously inspected have been added to the register. By Section 131 of this Act, the Local Authority is directed to keep a register of workplaces in their district, and are responsible for the sanitary conditions of workshops, workplaces, and the homes of outworkers. "Sanitary Conditions" includes (a) cleanliness, (b) overcrowding, (c) ventilation, (d) drainage of floor of workshops in which any process is carried on which renders the floor liable to be wet to such an extent that the wet is capable of being removed by drainage, (e) sanitary conveniences.

There are 439 workshops on the register, to which 845

visits have been paid.

Cleanliness.—Sixty-eight workshops were found to require the ceiling or walls, or both, cleansed and limewashed. The necessary cleansing has been done in every case.

Overcrowding.—Eight workrooms were found to be overcrowded. Notices were served on or representations made to the responsible persons, and the overcrowding has been abated. Seventy-four workrooms were measured up and cards setting out the measurements have been supplied to the occupiers stating how many persons could be employed in each workroom.

Drainage of Wet Floors in Laundries, etc.—The floors of these places were found generally to be in a satisfactory condition.

Sanitary Conveniences.—Six workshops were found to be without proper sanitary convenience, and sixteen were found to have unsuitable or defective W.C. arrangements. Suitable and sufficient accommodation has been provided where necessary, and the defective water closets have been repaired and put into good sanitary condition.

Our attention has been called to the following defects in

workshops by H.M. Inspector of Factories:—

Twelve workshops in a dirty condition.

Two workshops overcrowded.

All these defects have been remedied and notice to that

effect has been sent to the Factory Inspector.

Homework.—The sanitary condition of the premises of workers engaged in homework is considered to be quite as important as that of workshops. No less than nine sections of the Factory and Workshops Act are devoted to regulations affecting homework. The powers referred to aim at the prevention of work being done in dwellings which are injurious or dangerous to the health of the persons working therein, e.g., through overcrowding, want of ventilation or other insanitary conditions. The homework in this district consists mainly in the making or altering of wearing apparel. The number of outworkers in Cheltenham is 160, of which 75 are tailors, 37 bootmakers, 15 plain sewing, 20 dressmakers, 8 underclothing and 5 miscellaneous.

Last year 321 visits were paid to the various houses in which work is carried on, and 44 defects were discovered and rectified. Taking the outworkers premises as a whole, they

are kept in good, cleanly condition, being also fairly well lighted, ventilated, &c. We still experience some difficulty in obtaining from employers the list of outworkers which the Act requires them to send in to the offices of the Local Authority, on or before the 1st of February and August in each year. A number of firms had to be threatened with legal proceedings before they supplied the names and addresses of their outworkers. In no instance was any case found where wearing apparel was being made, cleansed or repaired, in a house while any inmate was suffering from Infectious Disease, nor was any case discovered requiring action to be taken to obtain an order prohibiting homework being done in an infected house.

Bakehouses.

The number of bakehouses on the register is 55. these 46 are above ground and 9 are underground. underground bakehouses have all been certified by the Sanitary Authority as being suitable with regard to their construction, lighting, ventilation, water supply, drainage, and in all other respects, having been extensively altered and amended to the satisfaction of the Corporation as required by the Factory Act, 1901, as the result of notices served from the Health Department. The whole of these places have been inspected twice during the year, and, with few exceptions, were found to be in good sanitary conditions. A new model bakehouse has been opened, the rooms of which are large, airy and well lighted. The flooring is of concrete, and the walls are of white glazed bricks. The fittings are as plain as possible and so placed as to enable the rooms to be kept thoroughly clean with the minimum of labour. The stoking of the ovens is applied externally, so that the smoke and sulphurous fumes are largely consumed in the furnace, and the remainder escapes into the open air without a chance of contaminating the atmosphere of the bakehouse or ovens. Another bakehouse has been considerably improved by match-boarding the The ovens have also been altered so that ceiling and walls. firing is now done outside the bakehouse; this effectually prevents the contamination of the air of the bakehouse from smoke and fumes, which formerly occurred when stoking of the ovens was done from the inside.

Report on the Administration of the Factory and Workshop Act, 1901, in connection with Factories, Workshops, Laundries, Workplaces and Homework.

1.—INSPECTION.

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises.	Number of Inspections.	No. of Written and Verbal Notices.	Number of Prosecutions.
Factories (including Factory Laundries.) Workshops (including Work-	25	4	Nil
shop Laundries.) Workplaces (other than Out-	685	98	"
workers' premises included in Part 3 of this Report)	135	12	,,
Total	845	114	,,

2.—DEFECTS FOUND.

Particulars.	Number of Defects found	No. of Defects remedied.
Nuisances under the Public Health Acts: Want of cleanliness Want of ventilation Overcrowding Other nuisances Sanitary accommodation (insufficient unsuitable or defective not separate for sexes	68 5 8 Nil 6 16	68 5 8 Nil 6 16
Total	103	103

3.—HOME WORK.

Lists received from Employers.

	Twice	in the year.	Once in the year.			
Nature of Work.	Lists.	Outworkers.	Lists.	Outworkers.		
Making and Altering Wearing Apparel	25	151	27	160		

4.—REGISTERED WORKSHOPS.

Dressmakers	\$	• • •	• • •	• • •	• • •	• • •	90
Tailors	• • •	• • •	• • •	• • •	• • •	• • •	49
Laundries	• • •	• • •		• • •	• • •	• • •	94
Bootmakers		• • •	• • • •	• • •		• • •	37
Milliners	• • •	• • •	• • •	• • •	• • •	• • •	25
Bakehouses	• • •	• • •	• • •	• • •	• • •	• • • •	55
Miscellaneou	lS	• • •	• • •	• • • •	• • •	• • •	89
Total	num	ber of	Works	hons or	Ragis	tor	439

5.—OTHER MATTERS.

Class.	Number.									
Matters notified to H.M. Inspectors of Factories Failure to affix Abstract of the Factory and Work-										
shop Act (s. 133)	15									
Notified by H.M. Inspectors	14									
Reports (of action taken) sent to H.M. Inspectors	$\frac{12}{2}$									
Underground Bakehouses (s. 101)	9									
Certificates granted during the year	Nil									
In use at the end of the year	9									

Dairies, Cowsbeds and Milkshops.

The whole of the 55 Milkshops and 14 Dairy Farms in the Borough have been regularly inspected during the year, and the bye-laws for regulating them were found to be fairly well carried out. In the case of one milk seller, it was found necessary to request them to cease selling milk owing to the unsuitability of their premises for dairy purposes. Some of the Cowkeepers have not yet quite realised the full importance of the regulations requiring the cleansing of the udders and teats of the cows before milking. There is an improvement, however, in this direction at most farms, and no doubt those who are somewhat backward now will be induced to comply fully with the regulations requiring such cleansing. cowshed which had not previously been altered was just recently brought up to the requirements of the regulations by making considerable alterations and amendments to the paving and drainage and the laying on of a constant supply of water to the dairy and cowshed. During the year there were eight applications for registration as purveyors of milk or dairymen. The premises having been inpected and found satisfactory, the applicants were duly registered. following is a list of the cowsheds in the Borough at the present time:—

Arle Farm Dairy ... Messrs. W. & S. Wood Arle Court Farm ... Mr. F. J. Brown Beech Hurst, Hewlett Road Mr. J. Manners Elm Farm, Fiddlers Green... Mr. F. J. Brown

Fiddlers Green Farm ... Mr. V. J. Cock Hale's Road ... Mrs. Haines

Harthurstfield Farm ... Mr. C. Ballinger Harthurstfield ... Mrs. Nunney

Hesters' Way Farm ... Mr. F. Gabb Oakley Farm, Battledown... Mr. W. Farden Priors' Farm ... Mr. G. D. Heath Sandford Mill Farm ... Mr. W. Burrows

Whaddon Farm ... Mrs. Wood

Ash Receptacles.

The Cheltenham Improvement Act provides that every house shall have a receptacle for ashes and house refuse of such sort as shall be approved by the Corporation. The one usually approved is a covered circular galvanised iron ash receptacle of not less than 22 guage iron. Where one is not sufficient to hold a week's accumulation of ashes and house refuse, two or more are required, for it is desireable that they should not be too large or they would be too heavy for the men to lift when full of ashes or refuse. By the use of these covered moveable receptacles the collection and removal of ashes is considerably facilitated and the abolition of the large open ash pits, with the unsightly decomposing contents—often a very decided nuisance—is secured. During the year 197 of these moveable ash receptacles have been provided. The general adoption of these bins is, I hope, only a matter of time as the advantages accruing from their use is appreciated wherever they have been adopted.

Offensive Trades.

The offensive trades carried on in this town are fortunately very few in number. The trades in operation here, which are in the statutory list of offensive trades, are two fellmongers, one tallow melter, four tripe boilers, eighteen rag and bone dealers, and twenty-two fried-fish shops. The bye-laws regulating these trades have been fairly well carried out, although it has been necessary to occasionally call attention to the necessity of removing garbage, &c., regularly, and for the thorough cleansing of the floors and pavements at the close of each working day.

Common Lodging Houses.

The Common Lodging Houses now on the register number six and have accommodation for 134 lodgers. These places have frequently been visited by the Inspectors. There has been no cause for complaint against any of the keepers, the houses being on the whole well conducted, clean and orderly.

The following table gives the names of the keepers and the situation of the Common Lodging Houses in the borough, with the number of lodgers they can accommodate.

Name.	Situation.	Number of Lodgers.
W. C. Brown	20 & 21 Stanhope Street	21
J. Biddle	40 Stanhope Street	10
J. Dix	Cumberland Cottage,	
	Grove Street	23
Mrs. Evans	Cumberland House,	
	Grove Street	31
Alfonse Meulbruck, jun.	Cumberland Villa,	
,,,	Grove Street	21
Alfonse Meulbruck, sen.	2 & 4 Grove Street	28
	Total	134

School Sanitation.

During the year the sanitary conveniences of three schools have been remodelled on up-to-date sanitary lines. The old insanitary trough closets at one of the Elementary schools were removed and replaced by strong fireclay pedestal wash-down closets, a full two-gallon siphon action flushing cistern and chain pull being provided to each closet. The urinals were also provided with a sufficient supply of water from suitable flushing boxes. At two private schools the drains and sanitary appliances were all removed and brought up to the standard required for a Sanitary Certificate.

A. E. HUDSON, Mem. Royal San. Inst.,

Chief Sanitary Inspector.

Diphtheria and Bacteriological Methods.

In regard to diagnosis by bacteriological tests there is a certain indefiniteness and uncertainty which requires to be met with the discretion of experience. In this connection there is no definite and clear understanding as to what is and what is not Diphtheria. I do not think it has yet come to be accepted that every person whose throat being swabbed and proved to be harbouring the specific microbe of Diphtheria is a case of Diphtheria as contemplated by the Infectious Diseases Notification Act, whether he exhibit any or none of the usual clinical signs of the disease, nor can it be said to be definitely proved that such a person is a constant danger to the community. For if that were so it would be imperative to have the throats of all school children periodically examined by the swabbing and culture test, and the test should be extended to adults and, in fact, to the whole community with the view of segregating the carriers of the germ.

The logical inference of bacteriological teaching is to this effect, but I presume no one will be bold enough to advocate

the practice.

The limited application of the test to a community immediately surrounding a marked case of Diphtheria is fairly easy of performance sometimes, but even here the whole proceeding of segregating those giving positive results is not practicable in a general way. There is something yet to be made clear in respect of the capability of these people to cause the disease in others; that commonly they do not do so is evident upon the face of the business. Experience, both with Scarlet Fever and Diphtheria, shows that it is the occasional case possessed of an exceptional infectiousness, or power of spreading the disease, that does the mischief, and to the present moment there is no means of differentiating these cases from those that are innocent. We only learn their power by their effect, but in the vast majority of cases there is no such effect, for, happily, it is only now and then that these special infectious cases are met with, the interval sometimes being long. It is in such exceptional cases that the bacteriological test is particularly useful.

The cases of Diphtheria that have been notified to us up till recently have been all diagnosed by the clinical signs of the disease exhibited in the throat, &c. These cases, though commonly left to be treated in small houses where they occurred, have shown little infective power, and a 20 years' experience of the behaviour of Diphtheria as so treated points to a remarkable infrequency of any spread of the disease. That Diphtheria, from the point of view of infectiousness, is in any degree comparable to small-pox, chicken-pox, German measles, mumps, whooping-cough. or influenza, I would deny with emphasis, as others of similar length of experience would also no doubt do.

Now supposing during all these years, instead of relying upon clinical signs for diagnosis, we had made free use of bacteriological diagnosis, it is certain that the cases heard of would have been greatly increased in number, and this number would have been infinitely further multiplied by extending the search for the microbe to persons who were or had been in contact with the case. The expense, labour, inconvenience, loss of time, and loss of liberty must have been enormous. But to what service? Numerous cases of mild sore throat would have been called Diphtheria. Numbers of persons would have been called carriers of Diphtheria; but of cases with evident clinical signs and symptoms there would have been the same number in all probability, i.e., the average of 49 cases per annum that were diagnosed by common naked eye observation, and which included the only cases dangerous to life. Nearly all these cases would have been the initial cases which would have led to the swabbings of the throats of other people for the discovery of those cases whose symptoms were too mild to claim particular notice, or who had no symptoms at all but carried the microbe in their throats.

Would all the trouble have resulted in a diminution of the average number of cases with decided symptoms and of the deaths, in number averaging 5.8 per annum, which accrued to the 49 cases per annum notified, so as to have made the work worth doing? I cannot persuade myself to think so. The labour and loss involved would have had its own life value, which in the aggregate must have been very considerable, and a rational consideration of this or any other matter affecting life and death cannot be made without reference to all due economy. If it be admitted that there might have been a little gain, there would also have been some loss. A very large gain would not have been a possibility. In this connection interesting reference may be made to the age at

death of diphtheria cases given on page 15.

Some practitioners appear to need to be reminded that the danger to the case itself lies in clinical signs and symptoms, and the non-discovery of the specific bacillus of Diphtheria does not obviate this danger, nor of necessity make the case less important. There are many faults and fallacies in the process of bacteriological diagnosis for one consideration. But some practitioners appear to be so strongly imbued with the necessity of finding the bacillus and of the importance of the bacillus when found, that they neglect to notify cases with palpable clinical signs of the disease, whilst now always ready to swell our number of Diphtheria cases by notifying those destitute of any clinical signs or symptoms, but in which the bacillus has been discovered.

I write this without any desire to detract from the just value of the bacteriological diagnosis of Diphtheria. There are occasions when, under the direction of the Medical Officer of Health or otherwise, swabbing of apparently healthy throats may be called for, but haphazard notifications like those referred to above are apt to prove incommoding whilst not being of any use. The lay public are vastly alarmed at the word Diphtheria, and it is rather easy for a practitioner to raise a panic by a free use of the bacteriological test when no special reason exists for this test, and there may be a too hasty closing of school doors as a consequence, and an unwarranted interference with education can easily be caused in this manner. I know of nothing that requires the exercise of more careful and unhurried discretion.

Measles Epidemics.

The occurrence of a Measles epidemic in Cheltenham during last year makes but one more in the list of such epidemics. The catastrophe is periodical. Its recurrence may be counted upon with certainty. In recent times the

following years have been epidemic years for this disease in Cheltenham:

Year.					Deaths	from Measles.
1884		• • •	• • •	• • •		30
1892	• • •	• • •	• • •	• • •	• • •	41
1896		• • •	• • •	• • •		47
1905		• • •	• • •			30
1909	• • •	• • •	• • •	• • •		47

In intervening years there have been minor exacerbations not amounting to wide-spread epidemics, with remissions in the number of cases in other intervening years. Observation of the behaviour of cases of Measles leaves one in doubt as to all the causes of its becoming epidemic. Of course, we have the fact that as one attack is largely protective against a further attack, time is required after a severe epidemic for the birth and upgrowth of a fresh batch of children susceptible to attack. It is not this fact alone, however, which determines the occurrence of a bad Measles epidemic. There is an unknown factor—a reason why from time to time Measles becomes prevalent and spreads with great rapidity which is unrelated to the number of susceptible persons in the population. Thus sometimes in a year Measles will be prevalent in a limited quarter, but fail to spread. It may be watched grow into a little flame and die suddenly out. But presently comes the epidemic year when it does not die out until it has passed with great rapidity like a scourge over the town, and commonly also over a large part of the rest of the country at the same time. The infection assumes a more potent character upon such occasions for some reason unexplained.

Measles divides with Infantile Diarrhea the palm of being the most destructive to life of all the microbic infectious diseases that find a place among the Registrar-General's seven chief zymotics, and the deaths from Measles in Cheltenham are about equal to those from Scarlet Fever, Diphtheria, and Whooping-cough put all together. There can be little doubt that it is a microbic disease, although no discovery of the microbe has been made. Its behaviour declares it to be such, whilst its infectiousness among young children who have never suffered an attack perhaps exceeds that of any other disease.

In the year 1896 Cheltenham suffered an epidemic of Measles closely resembling in all particulars that of last year. At that time, at the request of the Local Government Board,

I made a short special report upon the subject, and in comparing last year's experience with that of 1896, I find I have an almost exact repetition now of all that occurred thirteen The number of deaths, for instance, of the 1909 and 1896 epidemics are exactly the same, namely, 47. disease spread in a very similar manner in both years. epidemic occurred at the same season of the yearly, namely, in the first quarter of the year, with its climax in March, and the following peculiarities were equally observable in both epidemics: The deaths practically all occurred in the families of the labouring class in small houses. This is interesting, because of course many cases occurred in middle class houses, and the fact no doubt reflects the saving advantage of greater care and less crowded apartments. In the epidemic next further back, namely, that of 1892, the 41 deaths also all occurred in houses of under £18 a year rental. The deaths, with six exceptions in 1896 and with only three exceptions in 1909, were of children under 5 years of age. There was a death of one adult in both years. The deaths amongst boys were much more numerous than amongst girls. In the 1896 epidemic I was able to obtain a record of 476 cases that had been attended by the doctors of a certain Dispensary in the town. There were 245 boys and 231 girls, and amongst these 18 boys died and 7 girls, and the whole of the deaths in that year showed that 50 per cent. more boys than girls died. In the epidemic of last year 31 boys and 16 girls made up the 47 that succumbed.

Contemplation of the age at which children die from Measles is useful in connection with school closure. We see that the chief danger from Measles lies for the main part in children so young as to be under school age. The 47 deaths of last year, in fact, fell into the age groups as below:—

Under 1 year.	and unde 2 years.	r	2 and under 3 years.	 3 and unde 4 years.	and und 5 years.	Over 5 years.
11	 15		10	 5	 3	 3

Last year all the Infants' Schools of the town, excepting one, were closed on account of Measles. We have for many years recognised the uselessness and waste of closing the superior departments, and I have for some time left off demanding the exclusion from school of the brothers and sisters of patients suffering from Measles who are attending

the boys' and girls' departments, limiting the exclusion to infants who have not had the disease. The result of questions asked at the medical inspections in the schools seconds the experience we formerly relied upon in showing that a very high percentage of the elder children had had Measles, and the absence of deaths amongst children at the higher school ages show there is little risk to life for children who have gone out of the Infants' Department into the higher divisions of the schools.

Even in regard to the children in Infants' Schools, it is not for them, but for their younger kindred at home, that Measles epidemics are so particularly perilous, and of course an infant school child may catch this infectious disease at school and carry it home to kill the younger members of the family. It therefore probably is of some advantage to close Infants' The advantage, however, is not very great, because these schools can seldom be closed before the children attending them have been subjected to the infection and have been decimated by it. It is advocated that all the Infants' Schools of a town should be closed immediately that a Measles epidemic threatens. But I doubt whether this is practicable, because one never knows that an epidemic is coming until it is present, and the limited outbreaks occur so frequently that the Infants' Schools must very often be closed for nothing, were such advice always acted upon, and an epidemic such as that we had last year, and in 1896 and in the other years mentioned, attacks with such force, and advances so rapidly, that it is doubtful whether closing of Infants' Schools can have much effect in arresting it, however soon done.

Now we learn that any effort directed towards the prevention of the sudden sacrifice of life by Measles chiefly concerns children between 6 months and 3 years of age. What is to be done for them? In 1896 I was a strong advocate for the addition of Measles to the list of diseases requiring notification to the Medical Officer of Health. Professional opinion is still somewhat divided as to the desirability of this, but more appear to be against it than for it. It is recognised that Measles cases cannot be isolated in an Infectious Disease Hospital owing to their great number in these epidemic times, and it is hopeless to expect to stem the tide of an epidemic by such means. Disinfection of clothing, &c., after Measles cases is of very little, if any, advantage, and is rarely

done. The infection of Measles when apart from the human body appears to be very short lived, and no doubt it is chiefly from the living body of the suffering patient that infection is spread, though in times of epidemic the Measles infection temporarily must be a good deal about, and we do not know for sure that it has not an origin apart from the human body

altogether.

It is impossible to avoid being influenced as against notification by the experience of those who have adopted it. In several important instances, as for example in the two cases of the cities of Neweastle-upon-Tyne and Aberdeen, after a trial of some years the practice of notification of Measles has been abandoned as not possessing sufficient merit to justify its continuance. Dr. Matthew Hay, the M.O.H. of Aberdeen, has sent me a copy of his report made at the end of a 20 years' experiment in notifying Measles and Whooping Cough in Aberdeen, and which was found to supply so little evidence of any good being effected that the requirement was revoked by his Council. Dr. Armstrong, of Newcastle, after a shorter experience, appears to have come to the same conclusion. The expense entailed by the adoption of notification of Measles would not be justified unless it could be shown that the information of existing cases was being used in some definite way for the saving of life, or the prevention of the spread of the infection. Only one method occurs to me of dealing with known cases with any likely good effect, that is by visits to the houses paid by a nurse to see that the cases are receiving careful nursing and attention, and to render actual aid in that behalf. Notification, as it seems to me, would perhaps, assist, and the better enable such work to be done, if the ruling local Council really wished to do it, and would supply the nurses. Where a good nurse is available and working under the direction of the Medical Officer of Health, considerable good should result from her work amongst cases of Measles even without notification.

The Medical Inspection of School Children and School Hygiene.

This subject has taken up a considerable amount of time and attention. At the beginning of last year the Medical Officer of Health was appointed Medical Officer to the

Education Committee. The appointment of a supervising officer was thus somewhat belated. In response, however, to the circular letter sent out by the Board of Education at the onset, in which the local Education Committees were told that they should call in the local Medical Officer of Health to advise them what to do, I had volunteered a report to this end. This report is to be found printed in my annual health report for last year. The advice contained in it was not

generally adopted.

In my absence, however, they did adopt from my report the idea that in Cheltenham the inspecting at all the four ages mentioned in the Board of Education circular as those at which inspections were to be ultimately done might be begun immediately in Cheltenham. The Education Committee here passed a minute adopting this, which was not in strict conformity with circulars more lately issued by the Board of Education. Under my arrangements, a year's inspections have been recorded at all four ages, and the result will be set out in the report that I have in preparation. It may be taken, therefore, that in Cheltenham the inspection of School Children is now regularly established and well under way, and is being done in such a manner that it will henceforth not be an easy or common thing for a school child to escape inspection at the four respective age periods.

No arrangements, however, have yet been made in regard to looking after the defective children or in regard to making arrangements for their treatment, and in this respect Cheltenham is not taking the forward place it ought to do. The matter lies with the Education Committee, who require to form a Sub-Committee for the management of the business along with the Medical Officer, the latter, according to the requirement of the Board of Education, being the acting director of the business with everybody engaged in it responsible.

sible to him.

Some further improvements in the sanitary condition of certain schools took place last year, and the number of things remaining still to be done to comply with all the more urgent recommendations contained in the report I made a few years ago as to the sanitary condition of all the schools in the town are now much reduced. Many of the improvements that have been made are very marked. One cannot say that there is no school in the town that from the point of view of structure

and convenience does not show considerable imperfections, but since all the worst schools mentioned at the time of making the report referred to have been put out of existence, and all the second worst have been considerably altered, the existing conditions are at least vastly superior to what they were in 1905.

Milk Supply.

This subject continues with us, as with others, to be of great interest and importance, for the possibility of obtaining a supply of milk free from any danger to the consumer is still more of a hope than a realization. The sources of contamination still remain not greatly diminished by any efforts yet made, and no local effort that can be made, nor any general law that can be passed, will render the public at all times secure against the possibility of the milk as delivered

to them containing the germs of disease.

Much of the milk supplied to Cheltenham comes in from numerous outside districts, some of them situated rather far away, whilst every one of the half-dozen districts that immediately surround us supplies us with its quota. It is evident therefore that no isolated local action can have the effect desired. But even if we limit ourselves to our own district, and the milk produced within its borders, no guarantee can be given of the purity and safety of the milk. Time and again we have had pretty plain evidence of an outbreak of one disease or another being caused by milk, and considering that any one lot of milk whether the quantity be great or small is subject to receive and convey the germs of disease, it is by no means unlikely that many more cases of such diseases as Scarlet Fever and Diphtheria are brought about by the consumption of milk than those attributed to this cause. The extraordinary facility with which certain disease-producing microbes grow in milk, and the rapidity with which they render it productive of the particular disease to which they stand respectively in the relation of cause, must always render milk in the uncooked or untreated condition a source of peril, which can only be certainly obviated by heating the milk to such a degree as to insure the death of the living microbes above referred to.

Milk passes through so many hands—and an almost equally great danger lies in the utensils used to hold and

convey the milk, the pail, the churn, the bottle or can, which have to be washed and brushed and rinsed and scalded and filled—and some of the hands that handle all these vessels may be peeling from Scarlet Fever, and some of the throats of the handlers may contain a virulent strain of the Diphtheria bacillus, and some of the water used for the washing and rinsing may contain the typhoid bacillus. Often the water of a farmstead is derived from a very doubtful source. And a very short time after the infection of the milk with but a few suffices to swarm the milk with the microbes, which find themselves in such a nourishing and congenial fluid.

As regards cowsheds, we have had no difficulty in getting done what we have asked in the way of alterations, and our lead in this connection is being successfully followed in several of the surrounding districts. I strongly advocate cowsheds with open fronts, and we now have several here, and they are answering very well. The prejudice that requires cows to be shut up in closed sheds is absurd, though somewhat firmly fixed. That we should be building sanatoriums all over the country in which to treat delicate men and women in the open air, and doing this successfully, and at the same time and near the same places we should be boxing cows up in sheds so overcrowded that no human being could live in such an

atmosphere, is a matter fit for nothing but ridicule.

The cows in our open cowsheds are doing very well, indeed, but one milk purveyor here has kept five small yellow Guernsey cows, that are not of a particular hardy breed, in the open field by both day and night during the whole of the past winter, feeding and milking them without bringing them in, and they have been perfectly well and healthy all the time. Another milk producer here, Mr. Wood, of Arle Farm, kept forty cows in the open field by day and night all last winter, only bringing them into the sheds to milk them, and turning them out again immediately every night without exception, and without any reference to weather, and these cows have never ailed in any way, have given no less milk, and have been much cleaner than any cows I have ever seen in the winter time when kept in sheds. But it is well known that cows will live and do very well with a very small amount of shelter through the winter if well fed, just as well, in fact, as cowstock not in milk that it is everywhere customary to keep in the open. The idea that cows

give more milk when kept in closed sheds is a myth, as I am informed by those who are keeping their cows in the open. In an open-fronted shed the question of light and ventilation are settled, for at the most nothing further is required for these purposes than some louvred ventilators on the roof The only thing really else required is a proper floor with a good 2ft. channel at the heel of the stalls leading to an appropriate drain, and a water supply. For the rest, it is a matter of keeping. Consequently, in the main, old cowsheds can be made sanitary and sufficient by taking out their fronts, and by having their floors and the ground in front of the shed well and properly paved and drained, any other necessary items of amendment being comparatively small and inexpensive. There is often a question of water supply that has to be solved, but the whole expense is not great, nothing of such moment, for instance, as to require Government loans as has been suggested in certain quarters. Even if the landlord or owner of the farm has to spend a couple of hundred pounds, the interest on that sum is not vast in comparison to the rent as a rule, and the tenant will probably be agreeable to share the annual addition to his farm rent, if indeed members of our landed proprietary are so impecunious as sometimes represented, and cannot themselves bear the cost of providing for the tenants the necessary conveniences for the keeping of their cows, and for the carrying on in a proper hygienic manner the trade of dairyman.

Here in Cheltenham no difficulty has been met with. Duplicate notices, with detailed specifications of the work required to be done, were served on landlord and tenant, and they were left to make their own agreement, but the landlord

always ordered the work.

It is very essential to serve specifications of exact requirements, and have the carrying out of the work supervised. I cannot conceive how it is to be expected that such work will be properly done as the result of a general request to comply with the Regulations of the Dairies, Cowsheds and Milkshops Order, 1879, and the Public Health Act, 1875. Such a vague notice must lead to work being done in various styles, and generally badly.

Yet although it is possible to cause cowsheds to be made suitable for keeping cows, that, after all, is only a small part towards the production of clean milk, the mode of keeping the cows and the cowsheds is a most important factor, and here there is a great failing on the part of many cowkeepers. It is to a considerable extent a matter of clean litter, but litter is very often scarce, and the cows have next to none to lie upon, and the easy removal of excremental matter as soiled litter cannot be practised. The dung that falls on a naked floor is not so easy to remove, and if you attempt to wash the floors of cowsheds, they never get dry in the winter time. Very commonly there is too great an economising of litter with resulting dirty cows.

As to the condition of the cow's body in regard to freedom from tuberculosis and other diseases, that is a matter for the Veterinary Surgeon, but not for the Veterinary Surgeon appointed separately by every little Rural District, whose farmer councillors are his masters, and whose private clients are amongst those whose cows he has to inspect. That would never do! Nor is it possible for one district to appoint a Veterinary Surgeon to successfully examine cows and to cause the removal of those that are diseased, whilst none of the other districts around make any such appointment. This business cannot be worked, except as the result of a general arrangement, and it will be imperative to have some system of compensation for compulsory slaughter of cowstock.

Renewal of Old Sewers.

This necessary work seems likely to be now again proceeded with, for I understand that application has been made to the Local Government Board for powers to borrow the sum required to re-sewer the South-Eastern quarter of the town, including the Tivoli district, where are situated the sewers which have been considered to be private property. It has required an extraordinary persistence to bring the matter to this juncture. We are now assured of a Local Government Board Enquiry, and I hope some day to be in a position to report that the work mentioned in the application has been carried out. Before the issue of my next annual report it should be well in progress, if not completed.

Sale of Foods and Drugs Act.

Return of Articles submitted to the Public Analysist during the year 1909, with the results of the analyses.

(G. Embrey, Esq., Gloucester, Public Analyst.)

Samples submitted by Superintendent A. W. Hopkins.

Quarter ending March 31st.

		Quarter ending March 31st.									
2 S 2 2 8 2 4 4		Result. f Camphorated Oil, all genuine. Spirit of Nitre, all genuine. Butter, all genuine. Coffee, all genuine. Tea, all genuine. Whiskey, one adulterated, fine of £2 imposed, with 16/6 costs. Milk, all genuine, but one poor in fat.									
	Quarter ending June 30th.										
2 2 4 4 2 2 8	;; ;; ;; ;; ;;	Ground Rice, all genuine. Tea, all genuine. Pepper, all genuine. Butter, all genuine. Camphorated Oil, all genuine. Spirit of Nitre, all genuine. Milk, all genuine, but 2 poor in fat.									
		Quarter ending September 30th.									
3 3 4 4 2 8	??????????	Whiskey, all genuine. Gin, all genuine. Pepper, all genuine. Butter, all genuine. Arrowroot, all genuine. Milk, all genuine, but 4 poor in fat.									
		Quarter ending December 31st.									
8	,,	Milk, all genuine, but one poor in fat, and one poor in non-fatty solids.									



ANNUAL REPORT

UPON THE

Meteorology of Cheltenham,

BY

MR. A. C. SAXBY,

F.R. MET: SOC.;

BOROUGH METEOROLOGIST.

FOR THE YEAR 1909,

Latitude 51° 53′ 45″ N. Longitude 2° 3′ 21″ W. Height of Barometer above Mean Sea Level, 206ft.

THE INSTRUMENTS ARE OF THE HIGHEST QUALITY AND HAVE BEEN VERIFIED AT KEW.



To the Mayor, Aldermen, and Councillors of the Borough of Cheltenham.

GENTLEMEN,

I have pleasure in submitting to you my Annual Report for Cheltenham during the year 1909, being the 32nd year during which records have been taken.

The observations have been taken twice daily by myself or qualified Assistant. The Sunshine Recorder at Pittville has been very carefully attended to by the Head Gardener, the Charts being brought in with regularity.

The self-recording Rain Gauge provided by you last January, has been of much use and produced some interesting records of rainfall. All other instruments are as formerly, and in good working order.

Mr. W. Marriott, Assistant-Secretary of the Royal Meteorological Society, inspected the station and instruments during July.

The weekly Reports have been sent to the Royal Meteorological Society as formerly and also been published in the "Cheltenham Examiner," "Gloucestershire Echo," "Cheltenham Chronicle," and the "Looker-On."

I beg to tender my best thanks to those observers who have sent me returns from various stations over the county, and to all who have assisted me in the work.

I am, Gentlemen,

Your obedient Servant,

AUSTIN C. SAXBY,

F.R. MET. SOC.,

February, 1910.

Borough Meteorologist.

THE METEOROLOGY OF CHELTENHAM.

Abstract of Meteorological Observations taken by A. C. SAXBY, F.R., Met. Soc., Borough Meteorologist. Latitude 51° 53' 45" N. Longitude 2° 3' 21" W. For particulars see next page.

	Bird Asnu	S	HOURS	51	104	83	228	284	131	191	230	84	108	80	59		1633	12
fall.	No. of	Days.		13	9	21	12	9	14	91		20	23	12	22		191	11
Rainfall.	Total	fall	I.	0.65	0.44	3.15	1.83	68.0	2.99	2.19	1.95	3.33	\forall		4.42	_	27.9	10
Relative	at 9 a.m.		%	85	81	98	74	89	79	78	79	88	88	90	93		83	6
	n.	Min.	o	21	24	12	88	33	41	47	43	39	28	25	22		12	∞
	Absolute Max. and Min.	Date.		28	23	က	67	7	∞	20	28	2 and 8	31	24	21		Mar. 3	7
rures.	solute Ma	Мах.	0	50	56	57	20	80	20	73	85	89	99	56	57		85	9
AIR TEMPERATURES.	Ab	Date.		-	4	29	10	21	14	17	12	22	က	5	97		Aug. 12	5
AIR TE		Min.	0	34.4	32.3	33.5	39.7	43.1	47.8	52.9	52.5	47.2	45.8	35.7	35.0		41.7	4
	Means of	Max.	0	43.5	43.3	44.4	58.1	63.0	61.2	67.4	71.0	2.09	9.49	46.4	45.0		55.1	ಣ
		9 a.m. & p.m.	o	38.4	36.8	39.1	48.4	53.8	54.2	59.8	9.19	53.4	52.1	41.2	40.3		49.3	2
Corrected	Mean of Barom.	ya.m. α ρ.m. At sea-level.	INCHES.	30.179	30.162	29.531	29.983	30.104	29.990	29.943	30.046	30.021	29.775	30.053	29.690		29.956	
	1909. Month.			January	February	March	April	May	June	July	August	September	October	November	December		Means	

NOTES ON THE TABLES.

(See previous page).

COLUMN 1 is the mean reading of the Barometer at 9 a.m. and 9 p.m., corrected for temperature—32° Fahrenheit—and reduced to mean sea level, the instrument being kept at 397, High Street, 206 feet above mean sea level.

COLUMNS 3 to 8.—The maximum and minimum thermometers are read and set at 9 p.m. and entered to the same day. Instruments and screen are in Montpellier Gardens, 216 feet above mean sea level.

COLUMN 9.—The relative humidity is calculated by dividing the elastic force of aqueous-vapour at the temperature of the dew-point for the month by that corresponding to the actual temperature of the air.

COLUMN 10.—The rainfall is taken at 9 a.m. and the total entered to previous day. The rain gauge, placed within the enclosure at Montpellier Gardens, is of Snowdon pattern, 5 inch size, the rim being one foot above the ground.

COLUMN 12.—The amount of bright sunshine is registered by an improved Campbell Stokes Recorder, which is mounted on the top of Pittville Pump Room. Prior to 1908 Jordan's Twin-cylinder Recorder was used.

WIND.

The following is a percentage table of the direction of the wind; two observations are taken daily, i.e. 9 a.m. and 9 p.m.

					%
From the I	North	• • •			2.9
,, 1	North-Ea	st			8.5
,, 1	East	• • •		•	4.9
//	South-Ea	st		• • •	12.5
//	South	• • •	• • •		11.7
77	South-We	est	• • •	• • •	24.5
7.7	West	• • •	• • •	• • •	14.5
//	North-W	est	• • •		11.8
There were	e Calms				8.9

COMPARATIVE TABLE OF THE METEOROLOGY OF CHELTENHAM FOR THE YEARS 1878-1909.

A division has been made in the returns comprising this table, keeping the years previous to 1903 apart from 1903,-4,-5,-6,-7,-8,-9. The latter make a period long enough to take as an average—since the instruments were removed to Montpellier Gardens, this situation being more central and giving more accurate observations of Cheltenham than formerly.

This is especially marked with regard to Humidity of the town. The former position was on the extreme North side of Cheltenham, the screen then being within a short distance of the stream of water which at that part forms the boundary between the Borough and Prestbury, and was thus

detrimental to the natural dryness of the atmosphere.

	oheric are.	MEAN .	AIR TEI	MPERA'	ΓURES	Hum	idity.	Rair	nfall
Year.	Atmospheric Pressure.	Max.	Min.	Mean	Range	9 a.m.	9 p.m.	Inches.	Days.
1050	INCHES.	Q	0	Q 40.0	0	%	%	00.70	150
1878	29.913	56.1	41.5	48.8	$\begin{array}{c} 14.6 \\ 13.7 \end{array}$	83	88	33 18	176
1879 1880	29.944 29.971	$\begin{vmatrix} 52 \cdot 2 \\ 55 \cdot 8 \end{vmatrix}$	$\frac{38.5}{40.5}$	45·3 48·1	15.7 15.3	87 85	89 88	$\frac{32.63}{33.72}$	$\begin{array}{c} 212 \\ 177 \end{array}$
1881	29.957	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	38.9	46.9	$\frac{16.5}{16.1}$	82	85	25.28	185
1882	29.914	55.9	41.5	48.7	14.4	81	86	37 92	214
1883	29.964	55.6	40.6	48.1	15.0	85	89	29.93	$\frac{211}{204}$
1884	29.978	56.8	41.9	49.3	14.9	84	89	24.04	190
1885	29.930	54.8	40.0	47.4	14.8	84	87	26.45	193
1886	29.912	55.0	40.6	47.8	$14 \cdot 4$	83	86	32.55	193
1887	30.029	55.3	38.6	46.9	16.7	80	83	22.78	153
1888	29.959	53.8	40.1	46.9	13.7	82	84	28.85	195
1889	29.971	55.4	40.6	48.0	14.8	84	87	27.07	181
1890	29.959	55.6	40.1	47.8	15.5	84	88	20.09	191
1891	29.957	55.1	40.0	47.5	15.1	83	87	33.14	192
1892	29.948	54.6	38.7	46.6	15.9	82	85	19.45	
1893	29.990	59.1	41.6	50.2	17.8	81	83	19.91	169
$ \begin{array}{r} 1894 \\ 1895 \end{array} $	29·963 29·923	$\begin{array}{ c c c }\hline 56.2\\ 56.2\\ \end{array}$	41·6 39·6	48·9 47·9	$\begin{array}{ c c }\hline 14.6\\ 16.6\end{array}$	83 83	87 87	29.12 24.99	194
1896	30.030	57.0	41.4	49.2	15.6	83	86	21.54	$\begin{array}{c} 174 \\ 185 \end{array}$
1897	29.969	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	42.8	49.8	14.0	82	86	26.23	191
1898	30.009	58.2	42.5	50.3	15.7	82	85	24.23	173
1899	29.989	$58.\overline{5}$	$\frac{1}{41} \cdot 2$	49.8	17.3	81	85	25.72	162
1900	29.928	57.3	41.1	49.2	16.2	80	84	28.44	203
1901	29.966	56.2	40.1	48.1	16.1	79	83	$23 \cdot 27$	169
1902	29.906	56.9	42.4	49.6	14.5	84	87	22.53	176
Means	29.959	55.9	40.6	48.2	15·3	82	86	26.92	185
1903	29.883	55.8	43.0	49.4	12.8	82	84	35.75	215
1904	29.988	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	42.8	49.2	12.9	80	84	22.41	$\frac{210}{177}$
1905	30.005	55.7	42.9	49.3	12.8	79	83	23.79	165
1906	29.985	56.8	43.4	50.1	13.4	78	82	24.49	164
1907	29.966	55.4	43.1	49.2	12.3	80	85	29.00	174
1908	29.803	56.8	41.9	49.3	14.9	81	84	20.16	158
1909	29.956	55.1	41.7	48.4	13.4	80	85	27.90	191
Means	29.940	55.9	42.6	49.2	13.2	80	83	26 21	177

REMARKS.

The year has been a somewhat dull and depressing one, if only from a meteorological point of view.

Although to many minds it has been wet the greater part of the

summer, the total amount for the year is under the normal quantity.

The number of days on which rain fell is in excess of previous years but on so many of them it was only drizzle and light rain.

March established a record for itself in the low reading of ther-

mometers, on one night the temperature on grass fell to 72°.

Bright sunshine came in plenty during April and May, whilst also October, November and December contributed more than their usual amount.

As will be seen from the table at end of report, Cheltenham holds third place for bright sunshine amongst eleven inland stations and ranks with two others as lowest percentage of humidity, which means driest atmosphere.

Fogs were experienced on ten days only, and thunderstorms on

three.

JANUARY.—Atmospheric pressure during the second week was very irregular. From the 12th to 16th the barometer was very low and unsteady, sharply rising on the 16th and 17th, maintaining a high and steady course to end of month. Range of pressure 1.649 inch.

Temperature generally milder, sharp frosts occurring on the 8th

and 27th. Mean of the month o 7° above the normal.

Rainfall very light, being 1.58 inch under the average.

FEBRUARY.—Atmospheric pressure relaxed greatly on the 8th for two days, increasing steadily until the 13th, which was maintained until end of month. Range of pressure 1.220 inch.

Temperature colder, the average being 1.6° under the mean of the

month.

Rain fell on six days only—including light snow on 26th and 28th—total being 1.64 inch under the normal.

MARCH.—Atmospheric pressure unusually light, especially the first half of the month, varying most from the 22nd to 30th. Range of pressure 1.073 inch

Temperature for the month being very cold, the mean being 2.7° below the normal. During the night of the 3rd the temperature on grass

fell to 7.2° and 20.5° of frost registered in the srceen.

Snow fell sharply with rain during night of the 5th, continuing all day on the 6th, making the total 1.07 inch rain registered from 9 p.m. on the 5th to 9 p.m. on the 6th, of which 0.75 was contributed on former day. During night of the 6th 0.25 inch was registered. For the second time this winter very low grass and screen temperatures were experienced. During night of the 4th 25° of frost on the grass, and 16° of frost in the screen were registered.

APRIL.—Atmospheric pressure considerably increased as the month opened, remaining steady until the 19th. At no time during the month was the Barometer low. Range of pressure 1.022 inch.

Temperature warm for time of year and a great contrast to the previous month, the average being 2.4° above the normal.

Rainfall under the average, there being rain on two days only,

during the first half of the month.

Bright sunshine has been unusually great, there being eleven days on which more than 10 hours sunshine was registered and only two blank days.

MAY.—Atmospheric pressure was remarkably steady the whole month, with exception of the last week, when the Barometer fell from the 24th to 27th, slowly recovering to the 30th. Range of pressure 1.026 inch.

Temperature again above the normal to the extent of 1.5°. Owing to the great amount of bright sunshine and absence of rain the days have been very hot, with cold nights, 79.8° being the maximum in the screen on the 21st.

On fourteen days there were more than II hours bright sunshine daily, six of them being over I4 hours each.

Rainfall 1.06 inch less than the normal amount, there being none

previous to the 24th.

JUNE.—Atmospheric pressure very even the entire month. Range

of pressure 1.088 inch.

Temperature colder than usual, the mean being as much as 3.7° below the normal, this was accounted for by the abnormal amount of rain and the absence of bright sunshine. Distant thunder was heard on the 20th, and on the 22nd there were heavy thunderstorms at 12 a.m. and 2 p.m. On the 23rd 0.76 inch of rain fell between 2 a.m. and 5 a.m.

On five days only did the amount of bright sunshine reach double

figures.

JULY.—Atmospheric pressure was variable only during the second

and fourth weeks, the range of 1.857 being wider than usual.

Temperature 1.0° below the normal. Rain fell on seventeen days during the month, the amount on the 9th being more than half an inch, and on the 27th rain fell steadily from before noon to midnight, totalling 0.68 inch.

The amount of bright sunshine being much less than for some years past.

AUGUST.—Atmospheric pressure was markedly even the first two weeks, a slight relaxation of pressure taking place on the 17th, in-

creasing on 18th and 19th, remaining easy to end of month.

Temperature although 1.3° above the normal, it was only the first half of the month which was favourable to holiday makers, there being no rain between the 1st and 15th and only seven dry days between the 15th and 31st.

The greatest heat of the year was experienced in this month, on fourteen days over 70° was registered in the screen each day, these included

85° on the 12th and 82.4° on the 15th.

SEPTEMBER.—Atmospheric pressure was very little disturbed after the first week, a slight depression occurring on the 4th and 6th. Range of pressure 1.718 inch.

Temperature cooler, and most cheerless September on account of the succession of wet days. Rain fell steadily on the 28th for twenty-two hours, totalling 0.99 inch. Only ten days without rain.

Bright sunshine extremely low.

OCTOBER.—Atmospheric pressure was very unsettled the entire month, being firm at the commencement it relaxed on the 4th, increasing on the 6th, again the same thing occurring on the 7th and 9th, the Barometer then standing at a high level, running more easily from 11th to 18th, a sharp depression was experienced on the 23rd and 24th, followed by one on the 26th, remaining steady to end of month.

The fall of the Barometer on the 26th was accompanied by a steady

rain from 6 a.m. until past midnight.

Temperatures again very warm, being 3.6° above the normal.

Rainfall was great for the month, being 0.77 inch above the normal.

Rain fell on each day but eight.

Bright sunshine rather above the average for time of year, especially considering the quantity of rain.

NOVEMBER.—Atmospheric pressure was very regular most of the time, an easing off taking place at the end of the month, the Barometer reaching its lowest point on the 29th. Range of pressure 1.233 inch.

Temperature 2.2° below the normal, this giving some very low

readings at times.

Rainfall was very light, being 1.77 inch below the normal. Rain fell on 12 days only, including a light snow which fell during the greater part of Sunday the 14th, estimated total depth about 2 inches.

Bright sunshine, a good supply for time of year, the amount being

above the average.

DECEMBER. — Atmospheric pressure unusually erratic, the Barometer having a very busy month. The wind on the 2nd produced the lowest Barometer reading of the year—only exceeded in Cheltenham in 1886 when 28·1 inch was reached, the lowest since records have been kept (1876). From the 7th to 10th the Barometer rose 1·3 inch, another fall taking place from the 15th to 10th again producing a very low reading, by the 21st it had somewhat recovered only to sharply fall again on the 21st, recovering by the 25th. The 27th brought another depression which was steadily overcome during the three following days, when nearly the highest point of the month was recorded. The depression on the 21st was accompanied by a blizzard and heavy rain which followed during the night, when three-quarters of an inch was registered. Range of pressure 1·750 inch.

Average temperature for the month was 1.1° above the normal. Bright sunshine was above the average for the month,

COMPARATIVE TABLE OF HUMIDITY AND BRIGHT SUNSHINE REGISTERED AT INLAND STATIONS DURING THE YEAR 1909.

The lower the percentage of humidity the drier is the atmosphere.

HUMIDITY % AT 9 A.M.	STATION.	ABOVE MEAN SEA LEVEL.	BRIGHT SUNSHINE HOURS.
88 85 83 84 82 82 80 81 89 80 80	Bath Belvoir Castle Berkhampsted Birmingham Buxton Cambridge Cheltenham Coventry Nottingham Oxford Sheffield	 84—Feet 276 ,, 397 ,, 542 ,, 997 ,, 43 ,, 216 ,, 309 ,, 85 ,, 212 ,, 450 ,,	Total—1792 ,, 1609 ,, 1582 ,, 1214 ,, 1519 ,, 1686 ,, 1634 ,, 1478 ,, 1439 ,, 1603 ,, 1332

RAINFALL IN THE COUNTY OF GLOUCESTER IN 1909.

STATION.		OBSERVER.	RAIN- FALL.	RAINY DAYS.		
Cheltenham Bourton-on-the-Water Great Barrington R.A.C., Cirencester Berkeley Over Court Clifton Prestbury	•••	A. C. Saxby E. W. Kendall H. J. Barrett P. G. Grundy R. Shore R. C. C. Lippinco R. F. Sturge J. W. Guy	 ott		Inches. 27.90 31·11 32·05 32·15 29·66 34·86 37·05 27·96	191 193 192 168 197 182 203